

Last updated: 4 May 2007

## **TRYPOXYLON**

*Trypoxylon* Latreille, 1796:121, no included species. Type species: *Sphex figulus* Linnaeus, 1758, designated by Latreille, 1802b:339 (first included species).

*Tripoxilon* Spinola, 1806:65. Lapsus or emendation of *Trypoxylon* Latreille, 1796.

*Apius* Panzer, 1806:106. Type species: *Sphex figulus* of Panzer, 1801 [= *Sphex figulus* Linnaeus, 1758, by monotypy.

*Apius* Jurine, 1807:140, junior homonym of *Apius* Panzer, 1806. Type species: *Sphex figulus* of Fabricius, 1775 [= *Sphex figulus* Linnaeus, 1758], designated by Morice and Durrant, 1915:394.

*Trypoxilon* Jurine, 1807:141 and tableau comparatif, p. 2. Lapsus or emendation of *Trypoxylon* Latreille, 1796.

*Trypoxylum* Agassiz, 1846:380. Unjustified emendation of *Trypoxylon* Latreille, 1796.

*Trypoxylum* W. Schulz, 1906:212, junior homonym of *Trypoxylum* Agassiz, 1846. Unjustified emendation of *Trypoxylon* Latreille, 1796.

*Trypargilum* Richards, 1934:191. Type species: *Trypoxylon nitidum* F. Smith, 1856, by original designation.

*Asaconoton* Arnold, 1959:322. Type species: *Trypoxylon egregium* Arnold, 1959, by original designation.

Keys: Arnold, 1924:11 (Afrotropical species); Alayo Dalmau, 1876:7 (Cuba); Tsuneki, 1981d:17 (Sri Lanka), 61 (Burma), 1981f:2, 83 (species groups); Antropov, 2003 (North American species of *figulus* group).

Key to larvae: Evans, 1959b.

Male behavior: Brockmann, 1992 (*monteverdeae*)

Study of karyotypes: Gomes, Pompolo, and Campos, 1997.

Nest: Barth, 1910:121.

Review of biology: Kazenas, 2001b:173.

Nest parasite: Pagliano and Scaramozzino, 2001:21 (*Gasteruption assectator* (Linnaeus) on *Trypoxylon* sp.), 29 (*Gasteruption jaculator* (Linnaeus) on *Trypoxylon* sp.), 31 (*Gasteruption opacum* (Tournier) on *Trypoxylon figulus*).

### **Subgenus *Trypoxylon* s.s.**

#### **1. *abditum* Arnold**

*Trypoxylon abditum* Arnold, 1924:24, ♂. Syntypes: South Africa: Cape Province: George; and Zimbabwe: Bulawayo (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:338 (member of *scutatum* species group); Arnold, 1944:18 (description of ♀); Leclercq, 1965a:98 and 100 (in key), 126 (revision; Zaire); de Beaumont, 1967b:511 (South Africa: Cape Province); R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1981f:46 (single member of *abditum* species group; as *abditum*); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Antropov, 1993b:53 (Central African Republic); Hancock, Chahwanda, and Mhlanga, 1995:40 (paratype in Bulawayo Museum).

#### **2. *accumulator* F. Smith**

*Trypoxylon accumulator* F. Smith, 1875:38, ♀. Holotype or syntypes: ♀, India: no specific locality (OXUM). – Cameron, 1889c:118 (India: Barrackpore); Bingham, 1897:227 (as synonym of *Trypoxylon bicolor*); Dalla Torre, 1897:700 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:345 (listed).

#### **3. *acutangulum* Arnold**

*Trypoxylon acutangulum* Arnold, 1951:99, ♀. Holotype: ♀, Niger: Niamey (BMNH). – Leclercq, 1965a:98 (in key), 127 (citation); R. Bohart and Menke, 1976:345 (listed).

#### 4. *aegyptium* Kohl

*Trypoxylon aegyptium* Kohl, 1906a:202, ♀. Holotype or syntypes: ♀, Egypt: no specific locality (NHMW). – Gussakovskij, 1936:650 (revision; as *aegyptiacum*; *scutigera* Taschenberg is possibly a senior synonym); de Beaumont, 1953a:175 (Mauritania; as *aegyptiacum*), 1956a:215 (Libya; as *aegyptiacum*), 1958b:66 (Algeria: Tassili des Ajjer; as *aegyptiacum*); Pulawski, 1964:142 (Egypt: Luxor, Saqqara; description of ♂); Krombein, 1969a:7 (nest structure, prey); de Beaumont, Bytynski-Salz and Pulawski, 1973:20 (Israel); R. Bohart and Menke, 1976:345 (listed); Roche and Zalat, 1994:116 (Egypt: Sinai Peninsula).

#### 5. *aeneipenne* Arnold

*Trypoxylon aeneipennis* Arnold, 1943:71, ♀, incorrect original termination. Holotype: ♀, Zaire: Megera Lake in Albert National Park (MRAC). – As *Trypoxylon aeneipenne*: Leclercq, 1965a:85 (in key), 107 (revision, Zaire); R. Bohart and Menke, 1976:345 (listed).

#### 6. *albipes* F. Smith

*Trypoxylon albipes* F. Smith, 1856:377, ♀. Lectotype: ♀, Albania: no specific locality (OXUM), designated by Antropov, 1986b:627. – Kirchner, 1867:223 (in catalog of European Hymenoptera); Kohl, 1885a:194 (in key to European *Trypoxylon*), 201 (original description copied), 202 (in checklist of world *Trypoxylon*); Ed. André, 1888:207 (in revision of Sphecidae of Europe and Algeria), 17\* (bibliographic references); Kohl, 1893a:30 (redescription, Albania, Spain: Granada); Medina, 1894a:260 (Spain: Sevilla) Medina, 1896:104 (record of 1894a was first record from Spain); Dalla Torre, 1897:700 (in catalog of world Hymenoptera); Mercet, 1906c:465 (in key to Palearctic species); Richards, 1931:244 (redescription; France: Bouche-du-Rhône: Cassis); Richards, 1934:315 (member of *figulus* species group); Gussakovskij, 1936:654 (revision); Giner Mari, 1943a:216 (in Sphecid Fauna of Spain); de Beaumont, 1947b:396 (Cyprus); Ceballos, 1949:102 (Spain); Pittioni, 1950:26 (Cyprus); Compte Sart, 1959:138 (Spain: Mayorca); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1965a:56 (Greece), 1969:92 (Turkey); Balthasar, 1972:229 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); R. Bohart and Menke, 1976:345 (listed); Georghiou, 1977:193 (Cyprus); Antropov, 1986b:627 (Syria, Greece, Albania, Azerbaijan, Uzbekistan, Turkmenistan, Tajikistan); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:87 (Spain); Antropov, 1995c:125 (synonymy; Italy, Spain, Algeria, Egypt, Syria, Israel, Turkey, Armenia, Tajikistan, Pakistan); Antropov *in* Bitsch et al., 2001:381 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Gayubo, Özbek, and Yıldırım, 2003:90 (Turkey: Iğdır: Aralık: Devlet Üretme Çiftliği); Yıldırım and Ljubomirov, 2005:1799 (Turkey: Kahramanmaraş: Tömek).

*Trypoxylon mediator* Nurse, 1903b:8, ♀, ♂. Lectotype: ♀, Pakistan: Quetta (BMNH), designated by Tsuneki, 1978b:63. Synonymized with *Trypoxylon albiceps* by Antropov, 1995c:125. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:63 (redescription), 76 (in key), 1979a:9 (in key), 70 (Pakistan: Quetta; comments), 1981f:31 (single member of *mediator* species group).

*Trypoxylon sulcifrons* Gussakovskij, 1936:654, ♀, ♂. Lectotype: ♂, Turkmenistan: Farab (ZIL), designated by Antropov, 1986b:627 (ZIL). Synonymized with *Trypoxylon albipes* by Antropov, 1986b:627. – Gussakovskij, 1935:421 (Tajikistan: Kulab; nomen nudum); R. Bohart and Menke, 1976:348 (listed); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast').

#### 7. *albipinosum* Tsuneki

*Trypoxylon albipinosum* Tsuneki, 1979a:173, ♂. Holotype: ♂, Laos: Vientiane Province: Gi Sion Vill. de Tha Ngone (BISH). – Tsuneki, 1979a:18 (in key), 1981d:29 (India; additional description), 78 (Hong Kong), 1981f:54 (member of *mindanaonis* species group).

#### 8. *albitarsatum* Tsuneki

*Trypoxylon albitarsatum* Tsuneki, 1977h:8, ♀. Holotype: ♀, Bismarck Islands: New Britain: Yalom (ZMK). – Tsuneki, 1981a:7 (in key), 45 (additional description), 1981f:52 (single member of *albitarsatum* species group), 1982a:46 (Bismarck Archipelago); Cardale, 1985:264 (in catalog of Australian Sphecidae).

**ssp. huonense Tsuneki**

*Trypoxylon huonense* Tsuneki, 1977h:14, ♂, ♀. Holotype: ♂, Papua New Guinea: Huon Golf: Simbang (TMB). – ***Trypoxylon albitarsatum huonense***: Tsuneki, 1981a:6, 7 (in key), 46 (New Guinea; new status), 1981b:100 (in key), 103 (Australia: Queensland); Cardale, 1985:264 (in catalog of Australian Sphecidae).

**ssp. muruanum Tsuneki**

*Trypoxylon albitarsatum muruanum* Tsuneki, 1981a:49, ♀. Holotype: ♀, Papua: Milne Bay District: Woodlark Island (Murua): Kulumulau Hill (BISH). – Tsuneki, 1981a:6, 7 (in key).

**9. algoense Arnold**

*Trypoxylon algoensis* Arnold, 1924:15, ♀, ♂, incorrect original termination. Syntypes: South Africa: Cape Province: Algoa Bay near Port Elizabeth (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:89 (in key), 115 (citation); R. Bohart and Menke, 1976:345 (listed).

**10. amankutanum Antropov**

*Trypoxylon amankutanum* Antropov, 1986b:625, ♀. Holotype: ♀, Uzbekistan: Aman Kutan (ZMMU). ). – Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

**11. amatorium Tsuneki**

*Trypoxylon amatorium* Tsuneki, 1980a:91, ♂. Holotype: ♂, North Borneo: Sandakan (USNM). – Tsuneki, 1980a:11 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**12. ambiguum Tsuneki**

*Trypoxylon ambiguum* Tsuneki, 1956g:21, ♂. Holotype: ♂, Japan: Fukui Province: Ohno (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:8, (key) 1972b:5 (redescription), 1973e:32, 36 (key); R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1981e:6 (key), 56 (redescription); Antropov, 1987:58 (Kuril Islands: Kunashir Island); Tano, 1994a:5 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

**13. anamalaiense Tsuneki**

*Trypoxylon anamalaiense* Tsuneki, 1979a:124, ♀, ♂. Holotype: ♀, India: Madras: Anamalai Hills: Cinchona (RMNH). – Tsuneki, 1979a:14, 15 (in key), 1981f:67 (single member of *anamalaiense* species group).

**14. angoramum Tsuneki**

*Trypoxylon angoramum* Tsuneki, 1981a:27, ♂, ♀. Holotype: ♂, New Guinea: ♂, East Sepik: Angoram (BISH). – Tsuneki, 1981a:5, 6 (in key), 1981f:20 (one of 3 members of *angoramum* species group).

**15. angustum Tsuneki**

*Trypoxylon angustum* Tsuneki, 1979a:89, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:11 (in key).

**16. antennatum Tsuneki**

*Trypoxylon antennatum* Tsuneki, 1979a:68, ♂, ♀. Holotype: ♂, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:8, 12 (in key), 1979c:5, 8 (in key), 28 (Java), 1980a:20 (North Borneo), 1981f:53 (single member of *antennatum* species group).

**ssp. longulum Tsuneki**

*Trypoxylon antennatum longulum* Tsuneki, 1980a:21, ♀, ♂. Holotype: ♂, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:4 (in key).

### 17. *apicatum* Tsuneki

*Trypoxylon apicatum* Tsuneki, 1979a:144, ♂. Holotype: ♂, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:14 (in key), 1981f:48 (member of *apicatum* species group).

### 18. *apicum* Tsuneki

*Trypoxylon apicum* Tsuneki, 1980b:109, ♀. Holotype: ♀, Philippines: Luzon: Mt. Makiling (BISH). – Tsuneki, 1980b:11 (in key).

### 19. *appendiculatum* Tsuneki

*Trypoxylon appendiculatum* Tsuneki, 1974b:632, ♂. Holotype: ♂, Borneo: Mt. Kinabalu (T. Tano coll., Fukui). – R. Bohart and Menke, 1976:630 (listed); Tsuneki, 1979a:9, 16 (in key), 162 (Malaysia), 1980a:5, 9 (in key), 21 (Borneo), 1980b:5, 6 (in key), 32 (Philippines; additional description; ♂), 1981f:23 (member of *appendiculatum* species group).

### 20. *arabicum* Gussakovskij

*Trypoxylon arabicum* Gussakovskij, 1936:649, ♀, ♂. Syntypes: Yemen: Sanaa (ZIL). – R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1978a:21 and 40 (tentative synonym of *Trypoxylon schmiedeknechti*); Guichard, 1980:228 (Oman).

### 21. *arnoldi* Menke

*Trypoxylon cognatum* Arnold, 1924:21, ♀, ♂, junior primary homonym of *Trypoxylon cognatum* Cameron, 1897. Syntypes: Zimbabwe: Sawmills; South Africa: Natal: Zululand: Mfongosi (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae), 1959:324 (Tanzania: Rukwa Valley); Leclercq, 1965a:97 and 98 (in key), 124 (revision; Zaire, Zimbabwe, also "Est Africain": Perhalorge Port); I. Robertson, 1969:480 (Tanzania: Ukiriguru); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

*Trypoxylon arnoldi* Menke in Bohart and Menke, 1976:345. Substitute name for *Trypoxylon cognatum* Arnold, 1924.

### 22. *arroyense* Richards

*Trypoxylon arroyense* Richards, 1934:298, ♂. Holotype: ♂, Mexico: Guerrero: Dos Arroyos (BMNH). Paratype: Panama. – R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruiz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 23. *arudum* Leclercq

*Trypoxylon arudum* Leclercq, 1965a:103, ♀, ♂. Holotype: ♀, Zaire: Garamba National Park: Ndelele (MRAC). – Leclercq, 1965a:83 (in key); R. Bohart and Menke, 1976:345 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains, as *arundum*).

### 24. *ashmeadi* Baltazar

*Trypoxylon elongatum* Ashmead, 1905:961, ♀, primary homonym of *Trypoxylon elongatum* F. Smith, 1856. Holotype: ♀, Philippines: Manila (USNM). – R. Brown, 1906:687 (in catalog of Philippine Hymenoptera); F. Williams, 1919d:143 (Philippines: Luzon: Los Baños: nesting behavior); Richards, 1934:315 (member of *figulus* species group); Evans, 1957b:97 (larva).

*Trypoxylon ashmeadi* Baltazar, 1966:336. Substitute name for *Trypoxylon elongatum* Ashmead, 1905. – Tsuneki, 1978b:72 (redescription), 1980b:79 (Philippines; description of ♂; additional description), 1981f:75 (member of *bicolor* species group).

### 25. *asinum* Leclercq

*Trypoxylon asinum* Leclercq, 1965a:108, ♀, ♂. Holotype: ♂, Zaire: Kivu du Nord: Rutshuru (MRAC). – Leclercq, 1965a:85 (in key); R. Bohart and Menke, 1976:345 (listed).

### 26. *asuncicola* Strand

*Trypoxylon asuncicola* Strand, 1910a:173, ♀, ♂. Lectotype: ♀, Paraguay: Asunción (NMHU), designated by Richards, 1934:288. – Strand, 1912:286 (nest structure); Richards, 1934:288 (revision); R. Bohart and Menke, 1976:345 (listed); Amarante, 1993:19 (ne. Brazil); Gomes, Pompolo, and Campos, 1995:174 (chromosome number  $n = 16$ ); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Peruquetti and Del Lama, 2003a:297 (nesting habits)..

### *spp. levius* Richards

*Trypoxylon asuncicola* var. *levius* Richards, 1934:288, ♀. Holotype: ♀, Brazil: Rio de Janeiro (NHMW). – Richards, 1934:345 (nest structure). – **As *Trypoxylon asuncicola levius***: R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 27. *atricorne* Tsuneki

*Trypoxylon melanocorne* Tsuneki, 1979a:121, ♀, ♂, primary homonym of *Trypoxylon melanocorne* Strand, 1922. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:14, 15, 17 (in key); Nuhn and Menke, 1994:26 (holotype in USNM)

*Trypoxylon atricorne* Tsuneki, 1979c:59. Substitute name for *Trypoxylon melanocorne* Tsuneki. – Tsuneki, 1979c:10 (in key), 59 (Indonesia: Java), 1981f:62 (single member of *atricorne* species group).

### *spp. planum* Tsuneki

*Trypoxylon atricorne planum* Tsuneki, 1979c:59, ♀. Holotype: ♀, Indonesia: West Sumba Island: Pogobina (Basel Mus.). – Tsuneki, 1979c:10 (in key).

### 28. *atrum* Tsuneki

*Trypoxylon atrum* Tsuneki, 1979a:169, ♀. Holotype: ♀, Laos: Wapikhamtong Province: Khong Sedone, Wapi (BISH). – Tsuneki, 1979a:17 (in key).

### 29. *attenuatum* F. Smith

*Trypoxylon attenuatum* F. Smith, 1851:120, ♀. Lectotype: ♂, Great Britain: Bristol (OXUM), designated by Antropov, 1991b:682. – F. Smith, 1856:376 (listed); Schenck, 1860:147 (Germany: Nassau region), 1861:151 (redescription, Germany: Nassau Region: Weisel); Kirchner, 1867:223 (in catalog of European Hymenoptera); Schenck, 1867a:353 (Germany: Nassau Region); Thomson, 1870:250 (in revision of Swedish wasps); Becker, 1880:153 (Russia: Sarepta, now Krasnoarmeysk S Volgograd); Marquet, 1881:184 (southern France); Kohl, 1885a:194 (in key to European *Trypoxylon*), 197 (in revision of European species), 202 (in checklist of world *Trypoxylon*); Wüstnei, 1886:38 (Germany: Schleswig-Holstein: Sonderburg); Ed. André, 1888:209 (in revision of Sphecidae of Europe and Algeria), 18\* (bibliographic references); Kohl, 1888b:723 (Austria: Tirol, now Italy: Alto Adige), 1883e:657 (Switzerland); Gasperini, 1889:68 (Dalmatia: Lesine, now Croatia: Hvar); F. Morawitz, 1893a:113 (Russia: Karelian Isthmus); Sickmann, 1893:81 (Germany: Niedersachsen: Iburg); Krieger, 1894:10 (Germany: Kingdom of Saxony); Borries, 1897:75 (nesting habits); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (Kingdom of Hungary, some localities are in today's Slovakia); Nevinson, 1900:62 (Great Britain: Wales: Criccieth); Pigeot, 1902:63 (nesting habits); E. Saunders, 1902b:143 (Great Britain: Jersey Island), 1903b:17 (Great Britain: North Wales), 1903d:246 (Great Britain: Channel Islands: Jersey); Antiga and Boffill, 1904:12 (Spain: Cataluña Province); Aurivillius, 1904:278 (in revision of Swedish Sphecidae); Höppner, 1904:168 (nest parasite: *Eurytoma rubicola* Gir.); E. Saunders, 1904c:604 (Spain: Mayorca); W. Schulz, 1904b:102 (Czechoslovakia); Kubes, 1905:84 (Czech Republic: Vytruby); Mantero, 1905:73 (Italy: Toscana: Isola del Giglio); Dusmet y Alonso, 1906:7 (Spain); Mercet, 1906c:465 (in key to Palearctic species); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Höppner, 1908:179 (mixed nest *Chevrieria unicolor* and of *Trypoxylon attenuatum*); Dittrich, 1911b:26 (Germany: Niederschlesien

Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); Morice, Mantero, 1911:75 (Italy: Sardegna: Isola dell'Asinara); Morice, 1911:131 (Algeria: Alger, Bône, Constantine); M. Müller, 1911:113 (occasional nesting in *Lipara* galls); Birula, 1912:546 (Ukraine: Radomysl near Kiev); Schirmer, 1912:168 (Germany: Berlin area); Haupt, 1913:51 (Germany: Sachsen-Anhalt: Dolauer Heide and Nietlebener Bruchfelder in Halle area); Szilády, 1913:88 (Hungary: Nagyenyed); Alfken, 1914:284 (NW Germany); Dusmet y Alonso, 1915:87 (Spain: Aragón); O. Meyer, 1919:157 (Germany: Posen Province, now Poland: Poznań Region); Dubois, 1920:88 (Belgium: Uccle); A. Wagner, 1920:37 (Germany: Lower Elbe region); Dubois, 1921c:217 (in key to Belgian Sphecidae); Hedicke, 1922:272 (Germany: Brandenburg: Gross Machnower Weinberg); R. Perkins, 1924a:229 (Great Britain: Devon); Berland, 1925d:151 (in Sphecidae Fauna of France); Bischoff, 1925:302 (Latvia: Jelowka and Wezkukkul; Poland: Grajewo area); Blüthgen, 1925:166 (Germany: Saale River valley: Himmellrleich); Koornneef, 1925:362 (Netherlands: Gelderland: Dieren); Hémon, 1926:199 (France: Finistère: Fouesnant); von Schulthess, 1926b:219 (Tunisia); Crèvecoeur and Maréchal, 1927:139 (Belgium); Falcoz and Ferrière, 1927:123 (France: mont Pilat in northern Cévennes); Benoist, 1928:410 (France: Alpes-Maritimes: Saint-Martin-Vésubie); Crèvecoeur and Maréchal, 1928:172 (Belgium: Boitsfort and Comblain-au-Pont); Chevalier, 1929a:14 (nesting habits); Crèvecoeur and Maréchal, 1929:167 (Belgium: Chaudfontaine); Grandi, 1929:277 (nest structure); Hamm and Richards, 1930:121 (summary of nesting habits), 126 (list of prey); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1931:9 (Spain); Dusmet y Alonso, 1931:6 (Portugal: Mitra); Grandi, 1931:49 (nesting habits), 57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Spooner, 1931:15 (Great Britain: Cambridgeshire); Bondroit, 1932:39 (Belgium: Solbosch, Uccle); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Jones, 1932:82 (Great Britain: Nottinghamshire: Bramcote); Mortimer, 1932:108 (nesting in wood confirmed); Nadig, 1933:77 (Morocco: Tizi n'Tichka); Balles, 1934:29 (Germany: Baden-Württemberg: Achern, Oberachern); Bondroit, 1934:60 (Belgium: Watermael); Giner Marí, 1934:135 (Spain); Grandi, 1934:75 (prey: *Xysticus nubilus* E.S.); Jansson, 1934:291 (Sweden); Richards, 1934:35 (member of *figulus* species group); Bernard, 1935:66 (France: Var: Fréjus area); Forsius *in* Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Grandi, 1935a:111 (Italy); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:130 (Poland: Łowicz, Opatów); Gussakovskij, 1936:658 (redescription); Maréchal, 1936:386 (review of literature on nesting habits, description of nest); Dulac, 1937:17 (France: Saône-et-Loire: Saint-Laurent d'Andenay); Grandi, 1937:305 (nesting in dry stems); Zavadil, Šusterka, and Bat'a, 1937:221 (in catalog of Sphecidae of Czechoslovakia); P. Freeman, 1938:4 (nest and prey); Maréchal, 1938b:211 (Belgium, on leaves of *Tilia*); A. Wagner, 1938a:124 (northwestern Germany); Giordani Soika, 1939b:74 (Italy: Venezia); Guichard, 1939a:42 (Great Britain: southern Cornwall: Polperro); Balthasar, 1941b:114 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Leclercq, 1941b:12 (Belgium: Liège area); Schneid, 1941:1053 (Germany: Bayern: Bamberg area); Audcent, 1942:25 (parasite: *Amobia signata* Meigen); Balthasar, 1943:42 (Czech Republic: Moravia: Zlin area); Giner Marí, 1943a:216 (in Sphecidae Fauna of Spain); Guiglia, 1943b:72 (Albania: Kopluku), 1944a:149 (Cyprus: Limassol), 1944b:33 (Italy); Richards, 1944a:118 (Great Britain: Wales: Cardigan); Spooner, 1946:26 (Britain: Leicestershire: Charnwood Forest); de Beaumont, 1947b:396 (Cyprus); Balthasar, 1948:144 (Slovakia: Kovačov); Guichard and Yarrow, 1948:89 (Great Britain: London: Hampstead Heath); Guiglia, 1948c:202 (Italy: Sardegna: Villasalto); Šnoflak *in* Zavadil and Šnoflak, 1948:59 (in key to Sphecidae of Czechoslovakia); de Andrade, 1949:20 (Portugal); Chambers, 1949:224 (Great Britain: Bedfordshire); Stelfox, 1949:276 (new to Ireland); Aerts, 1950a:51 (Germany: Nordrhein-Westfalen: Rheidter Wertchens near Köln); Georgel, 1950:64 (France: Seine-et-Oise: Sucy-en-Brie); Pittioni, 1950:26 (Cyprus); Szulczewski, 1950:102 (Poland: Wielkopolski Park Narodowy 15 km S Poznań); Caruel, 1951:100 (France: Marne Department); de Beaumont, 1951h:33 (Switzerland: Neuchâtel area); Leininger, 1953:18 (Germany: Baden-Württemberg: Binningen, Karlsruhe); Móczár, 1953 (Hungary); Nouvel and Ribaut, 1953:181 (France: Haute-Garonne: Saint-Béat); de Beaumont, 1954e:92 (Italy); Fahlander, 1954:253 (Sweden: Gästrikland Region); Grandi, 1954:166 (nest and prey), 237 (Italy); Hertzog, 1954:101 (France: Bouches-du-Rhône: Camar-

gue); Tjeder, 1954:68 (Sweden: eastern Skåne: Bredarör); Aerts, 1955:66 (Germany: Rheinland); Hellén, 1955a:122 (Finland: Jomala: Ytternäas, northwards to Vasa); Lehrer, 1955:265 (Romania: Moldova: Broșteni and Dealul Rusca in Iași District); Steiner, 1955:139 (France: Dordogne); Vogrin, 1955:40 (Yugoslavia); Binaghi, 1956:8 (nesting); Bytinski-Salz, 1956:226 (Turkey); Leclercq, 1956g:324 (Greece); Morel, Nouvel, and Ribaut, 1956:339 (France: Département des Pyrénées-Orientales); Bajári, 1957a:67 (in key to Hungarian Sphecidae); Benno, 1957:144 (Netherlands: Tilburg area, nesting in stems of *Rubus*); de Beaumont, 1957a:149 (Morocco); Zirngiebl, 1957:186 (Germany: Rheinland-Pfalz: Pfalz region); Benno, 1958a:128 (nesting in stems of *Rubus*), 1958b:17 (in review of Dutch Sphecidae); Nouvel and Ribaut, 1958:16 (France: Pyrénées-Orientales: Banyuls-sur-Mer area); Puławski, 1958a:186 (Bulgaria: Burgas, Sozopol); de Beaumont, 1959a:30 (Italy); Diniz, 1959:31 (Portugal: five localities); Grandi, 1959b:287 (Italy: Ferrara: Valle Pega); Suárez, 1959:59 (Spain: Almería Province); Wolf, 1959b:25 (Germany: Nassau); de Beaumont, 1960a:21 (Greece: Rhodes Island); Noskiewicz and Puławski, 1960:108 (in key to Polish Sphecidae); de Beaumont, 1961c:51 (Greece: Crete Island); Grandi, 1961:181 (life history); Hoop, 1961:66 (Germany: Schleswig-Holstein: Landwehr); Grandi, 1962:96 (Italy); Valkeila, 1962b:66 (southwestern Finland); Babiý, 1964:115 (Austria: Land Salzburg); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:85 (in Sphecid Fauna of Switzerland), 1965a:56 (Greece); Fæster, 1965:192 (Denmark: Hansted Nature Reserve); B. Klug, 1965:132 (Germany: Baden-Württemberg: Freiburg im Breisgau area); Roberti, Frilli, and Pizzaghi, 1965:110 (Italy: Emilia-Romagna: Pianello in Piacenza Province); Scobiola-Palade, 1966b:392 (Romania: Tulcea District: Periprava); Balthasar, Hrubant, and Hrubant, 1967:170 (Bulgaria: Slanchev Bryag near Nessebar); Benno, 1967:38 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:338 (Turkey); Gauss, 1967:554 (Germany: Baden-Württemberg); J. Heinrich, 1967:76 (Germany: Bayern: Unterfranken District); Niedl and Denes, 1967:79 (Czech Republic: Třeboň area); Scobiola-Palade, 1967a:162 (Romania: Constanța District: Comarova, Dumbrăveni); Yarrow, 1967:63 (Great Britain: Cornwall: Isles of Scilly); Benedek, 1968:73 (Hungary, floral records); de Beaumont, 1968a:272 (Canary Islands: Gran Canaria); Haneda, 1968c:69 (a European species found in Japan); Leclercq, 1968b:39 (Great Britain: Kent); Wolf, 1968:12 (Germany: Nordrhein-Westfalen: Siegen, inhabitant of forest edge); Lefeber, 1969c:234 (Netherlands: St. Pietersberg = Montagne Saint Pierre); Scobiola-Palade, 1968b:142 (Romania: Island of Letea in delta of Danube; list of prey), 1968c:385 (Romania: Comana, Copăceani, Mogoșoia, Pantelimon); Benedek, 1969a:84 (Hungary; marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Dathe, 1969:440 (Germany: Berlin Zoological Garden); Stelfox, 1969:238 (in key), 239 (Ireland: Kildare County: Landenstown House); Zangheri, 1969:1704 (Italy); Benedek, 1970:99 (Hungary: Tapolca); de Beaumont, 1970a:402 (Afghanistan); Hoop, 1970:61 (Germany: Schleswig-Holstein: Heiligenhafen); Oehlke, 1970:723 (Democratic Germany); Danks, 1971a:347 (nesting habits); Dathe, 1971:234 (Germany: Berlin Zoological Garden; phenology); Schmidt, 1971b:38 (Germany: Mainz area), 1971c:74 (Germany: Schleswig-Holstein); Stritt, 1971a:104 (Germany: Baden-Württemberg: Karlsruhe); Balthasar, 1972:226 (in Sphecid Fauna of Czechoslovakia); Haeseler, 1972:155, 165, 175, 200 (Germany: Schleswig-Holstein; anthropogenic habitats); Oehlke, 1972:137 (Germany: Hiddensee Island); Kazenas, 1972b:155 (Kazakhstan); Lomholdt, 1972:122 (Denmark: Læsø Island); Niedl and Deneš, 1972:152 (Czech Republic: Třeboň area); Scobiola-Palade, 1972a:150 (Romania: delta of Danube: Caraorman); Simon Thomas, 1972:183 (France: Landes); de Beaumont, Bytinski-Salz and Puławski, 1973:20 (Israel); Lefeber and Petit, 1974:163 (Belgium: Plombières); Erlandsson, 1974:75 (Italy, Spain); Simon Thomas, 1974:57 (Netherlands: Limburg); Kofler, 1974:320 (Austria: Kärnten); Scobiola-Palade, 1974:144 (Romania: Sărăturile sandbank in Danube delta); Frilli, and Pizzaghi, 1975:53 (Italy: Vernasca in Piacenza Province); Lefeber, 1975b:120 (Netherlands: Schiepersberg); Lomholdt, 1975b:31 (Denmark: Anholt Island); R. Bohart and Menke, 1976:345 (listed); Haeseler, 1976b:72 (Germany: Friesian Islands: Amrum Island); Leclercq, Gaspar, Delecluse and Thirion, 1976:149 (Belgium: freeway median strip); Leclercq, Gaspar, Lajoinie, and Thirion, 1976:178 (Belgium); Lomholdt, 1976:266 (in Sphecid Fauna of Fennoscandia and Denmark); Simon Thomas and Wiering, 1976:109 (Netherlands); Georghiou, 1977:193 (Cyprus); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Russia:

Bryansk Oblast'); Báez and Ortega, 1978:192 (Canary Islands); Haeseler, 1978b:63 (Germany: Niedersachsen: a bog near Oldenburg), 1978c:195 (Germany: Frisian Islands: Borkum Island); Kazenas, 1978b:146, 147 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:253 (in key to Sphecidae of European part of former USSR); Benedek, 1979:232 (Hungary: Bakony Hills); Haeseler, 1979:10 (Germany: Niedersachsen: 10 km S Oldenburg); Leclercq, Gaspar and Verstraeten, 1979:map 1419 (Belgium); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 84 (Netherlands: distribution map); Marchal and Leclercq, 1979:9 (Belgium: Gembloux); Schwammler, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve); Richards, 1979:398 (British Channel Islands); Tsuneki, 1979a:7 (in key); Jacob-Remacle and Leclercq, 1980:193 (Belgium: gardens in Liège); Pagliano, 1980:129 (Italy: Piemonte); Richards, 1980:45 (in key to Sphecidae of British Isles); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Józán, 1981:305 (Hungary: Hortobágy National Park); Haeseler, 1981:52 (Germany: Frisian Island: Amrum Island); Skibińska, 1981:358 (Poland: Warszawa-Białoleka); Tsuneki, 1981d:86 (Russia: Daghestan), 1981e:84 (redescription of European specimens), 1981f:71 (single member of *attenuatum* species group); Woydak, 1981:41 (Germany: Westfalen: Hamm); Abrahamsen, 1982:138-146 (yearly and daily flight periods); Donath, 1982:214 (Germany: Cottbus Bezirk); Leclercq, 1982a:124 (Belgium: Liège); Skibińska, 1982:119, 123 (Poland: Mazovian Voivodship: Białoleka, Łomna, Warszawa, Wola Mrokowska); Dollfuss, 1983b:12 (Austria); Lefeber, 1983a:85 (Netherlands: Waddendistrict: northern coast sand dunes); Riemann, 1983:86 (Germany: Bremen-Daverden area); Chevin and Silvestre de Sacy, 1984:7 (France: Yvelines Department); Gayubo, 1984b:89 (Spain: Salamanca Province), 1984c:372 (Portugal: El Algarve Province); Gayubo and Tormos, 1984:17 (Spain: Valencia); Haack, Tschardtke, and Vidal, 1984:133 (Germany: Hamburg area); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Lefeber, 1984:29 (Netherlands: Maastricht); Nilsson, 1984:104 (Sweden: Västmanland Province); Schmidt, 1984:293 (Federal Germany: Baden-Württemberg); Schmidt and Westrich, 1984:240 (Federal Germany: Rheinland-Pfalz: Bad Münster); Eiroa and Novoa, 1985:24 (Spain: Pontevedra: Barra beach near Cangas); Gayubo, 1985c:169 (Spain: Valladolid: Quintanilla de Abajo); Haeseler, 1985a:350 (Federal Germany: Schleswig-Holstein), 355 (prey), 1985c:571 (Federal Germany: Frisian Islands); Józán, 1985b:57 (Hungary S Lake Balaton), 78 (floral records), 84 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:97 (Romania: delta of Danube); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:62 (Germany: Südpfalz); Gayubo, 1986c:34 (Spain: Zamora Province); Gayubo and Heras, 1986:47 (Spain: Segovia and Valladolid Provinces; floral records); Gayubo and Sanza, 1986:54 (Spain: Burgos, Soria); Gayubo and Tormos, 1986a:18 (Spain: Castellón de la Plana); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Józán, 1986:371 (Hungary: Kiskunság National Park); Skibińska, 1986b:151, 154 (Poland: suburbs of Warszawa), 160 (gardens), 162 (urban parks), 164 (streetside green), 174 (various green urban habitats); Vikberg, 1986:76 (Finland); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Haeseler, 1987b:668 (Federal Germany: Ipweger Moor near Oldenburg); Riemann, 1987b:45 (Germany: Niedersachsen: Nature Reserve Voßberge); Scobiola-Palade, 1987:64 (Romania: Dobrogea; as *atenuatus*); Schmidt and Westrich, 1987:365 (Federal Germany: Mainz area); Archer, 1988a:33 (Great Britain: Bernwood Forest near Oxford); Asís and Jiménez, 1988:273 (Spain: Castellón Province); Chevin, 1988:15 (France: La Manche Department); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Felton, 1988:221 (Great Britain: Kent County; population level); Gayubo and Mingo, 1988:87 (Spain); Haeseler, 1988:211 (Federal Germany: Frisian Islands); Karsai, 1988:100 (Hungary: Kiskunság National Park); Kowalczyk, 1988a:45 (Poland: Rogów), 1988b:65 (Poland: environs of Łódź); Riemann, 1988:223 (Germany: Bremen area); Wolf, 1988b:141 (Germany: Rheinland-Westfalen); Archer, 1989a:131 (Great Britain: York: found before coniferization); Jacobs, 1989:14 (Germany: Mecklenburg-Vorpommern); Józán, 1989:101 (Hungary: Tihany Nature Reserve); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Scobiola-Palade, 1989:88 (Romania: delta of Danube); Skibińska, 1989a:204 (Poland: Warszawa area), 1989b:291 (Poland: moist meadow in Warszawa area); Weiffenbach, 1989:108 (Germany: Hessen: Gießen area); Archer, 1990b:136 (Great Britain: city of Leicester), 1990c:15 (Great Britain: Leicester-



shire); Barbier, Rasmont, and Wahis, 1990:32 (Belgium: Hainaut); Gayubo, Asís, and Tormos, 1990a:19 (Spain); Jacobs and Oehlke, 1990:171 (new records from Democratic Germany); Kowalczyk, 1990:291 (Poland: Góry Świętokrzyskie); Pádr, 1990:81 (Czech Republic: Praha area); Pagliano, 1990:109 (in catalog of Italian Sphecidae); Schwammbeger and Priesner, 1990:540 (Austria: Kärnten); Antropov, 1991b:682 (in revision of *attenuatus* group); Dollfuss, 1991:122 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:404 (Italy: Piemonte, Veneto); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Jakubzik, 1991:75 (Germany: Köln); Józán, 1991:603 (Hungary: Bátorliget Nature Reserve); Kuhlmann et al., 1991:92 (Germany: Senne Region); Negrisolo, 1991:31 (ne. Italy); Nilsson, 1991:83 (Sweden: Lake Mälaren); Schembri, 1991:181 (new to Malta); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve SE Koblenz); Archer, 1992a:56 (Great Britain: Leicestershire), 1992b:21 (Great Britain: Yorkshire: Skipwith Common); Cölln and Jakubzik, 1992:87 (parasites: ichneumonid *Aritranis signatorius* (Fabricius), chrysidids *Omalus auratus* (Linnaeus) and *Chrysis cyanea* (Linnaeus)), 89 (Germany: Rheinland; reared from twigs of *Rubus*); Delarze, 1992:68 (Switzerland: Valais: Les Follatères); Gayubo, Borsato, and Osella, 1992:283 (Greece: Euboea); Józán, 1992a:229 (Hungary: Béda-Karapanca Protected Area), 1992b:173 (Hungary: Boronka-melléki Protected Area), 1992c:289 (Hungary: Zselic Hills); Nilsson, 1992:54 (Sweden); N. Schneider, 1992:179 (Luxemburg); N. Schneider and Jacob-Remacle, 1992:43 (Luxemburg); Sorg and Cölln, 1992:132 (Germany: Rheinland-Pfalz: Gönnersdorf); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:23 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Gayubo, Tormos, and Asís, 1993b:308 (specimen with deformed antenna); Hohmann, La Roche, Ortega, and Barquín, 1993:242 (detailed records from Canary Islands); Jakubzik and Cölln, 1993:136 (Germany: Rheinland-Pfalz: Bernkastel-Kues; nesting in stems of *Rubus*); Kuhlmann, 1993:76 (Germany: known from Westfalen); Sorg and Wolf, 1993:61 (Germany: Rheinland-Westfalen: Nature Reserve Die Spey); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Asís, Tormos, and Gayubo, 1994:199 (nesting behavior); Gayubo and Borsato, 1994:210 (Italy: Veneto); Kowalczyk, 1994:74 (Poland: Łagiewniki forest in Łódź); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Tormos, Asís, and Gayubo, 1994:188, 211 (Spain: Albacete Province); Archer, 1995a:21 (Great Britain: Yorkshire: Blaxton); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Negrisolo, 1995a:19 (visiting flowers of *Echinophora spinosa* L.), 23 (Italy: Veneto); Negrisolo in Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Papp and Józán, 1995:146 (Hungary: Sikkút oak forest); Riemann, 1995:52 (Germany: Bremen); Schmid-Egger, Risch, and Niehuis, 1995:213 (summary of records from Germany: Rheinland-Pfalz Province); Skibińska, 1995:423, 425, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Harvey and Plant, 1996:68 (Great Britain: summary of records from Essex); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996a:323 (Germany: nesting in stems of *Rubus*), 324 (parasites: *Aritranis signatorius* (Fabricius) and *Perithous divinator* Rossi, ichneumonids), 325 (parasitoids: undetermined eurytomid, pteromalid, and torymid; chrysidids: *Chrysis cyanea* Linnaeus and *Pseudomalus auratus* (Linnaeus)), 333 (in keys to cocoons), 1996b:401 (Germany: Rheinland-Pfalz); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Shlyakhtenok, 1996:304 (Belarus: Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:42 (Germany: Westfalen: summary of distribution and life history); Archer, 1997a:49 (Great Britain: Yorkshire: Cave Wold); Riemann, 1997:50 (Germany: Achim 14 km SE Bremen); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Celary, 1998:211 (Poland: Babia Góra National Park); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); Gonzáles, Gayubo, and Torres, 1998:74, 75 (Spain: Valladolid Province); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Harriersand Island in Weser River); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Salzman-Wandeler, 1998a:98 (Switzerland: Luzern Canton: Sempach); Shkuratov, 1998:98 (Russia: Rostov Oblast'); van der Smissen, 1998:70 (Ger-

many: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Gusenleitner, 1999:599 (Austria: Vorarlberg: Rheinhof W Hohenems); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:178 (Estonia); Pauly, 1999:109 (in catalog of Belgian aculeates); Salzmann-Wandeler and Rezbanyai-Reser, 1999:101 (Switzerland: Tessin: Monte Generoso); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Archer, 2000c:115 (Great Britain: Lincolnshire); Beavis, 2000:63 (Great Britain: Isles of Scilly); Blösch, 2000:248 (in Sphecida Fauna of Germany); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Antropov *in* Bitsch et al., 2001:367 (in Sphecida Fauna of Western Europe); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001b:14 (Great Britain: Watsonian Yorkshire); Basset, 2001:84 (France: Département de Gironde); Cungs and Jakubzik, 2001:122, 123 (Luxemburg); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitoshka near Sofia); Ohl et al., 2001:142 (distribution in Germany by provinces); Shlyakhtenok and Agunovich, 2001:144 (Belorussia: Berezinskiy Nature Reserve); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); Wolf, 2001a:172 (Germany: Bayern: Lech valley from Augsburg to Donau); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Archer, 2002b:112 (Great Britain: Watsonian Yorkshire: distribution map); Kazenas, 2002a:84 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Krüss and Tschardt, 2002:1576 (Germany: Schleswig Holstein: number of specimens higher on ungrazed and extensively grazed grassland); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibińska, 2002:33 (Belarus: no specific locality); Wiśniowski, 2002:70 (Poland: Ojców National Park); Ziska, 2002:9 (Germany: Berlin-Köpenick: Krumme Lake); Antropov, 2003:437 (first record from North America: Ontario and Vermont), 438 (in key to North American species of *figulus* group); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Artvin: Usufeli; Bilecik: Bilecik; Erzurum: Pasinler); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Harriersand Island near Bremen); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Schmid-Egger, 2003:759 (Italy: Sicilia: Castelammare, Madonie, Randazzo; Malta: Busket, Mgarr); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); von der Heide and Mettscher, 2003:103 (Germany: Niedersachsen: Emsland area); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 52 (first records from Canada: Ontario and Quebec: list of localities, the female from Guelph, collected in 1960, is the oldest known specimen from the Nearctic Region); Dorow, 2004a:127 (Germany: Hessen: Schönbusche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Jakubzik and Cölln, 2004:271 (in key to nests of Hymenoptera nesting in stems of *Rubus*); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo, Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Jakubzik and Cölln, 2004:271 (in key to nests of Hymenoptera nesting in stems of *Rubus*); Salzmann-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); Wiśniowski, 2004:45 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to Polish *Trypoxylon*); Beavis, 2005:194 (Great Britain: Islands of Scilly); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220

(Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:127 (in key to selected Iranian Sphecidae); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Tormos, Asís, Gayubo, Calvo, and Martin, 2005:281 (nest occupancy, preimaginal mortality); Yildirim and Ljubomirov, 2005:1799 (Turkey: Erzurum: Pasinler); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

As *Trypoxylon figulus*: Blades and Marshall, 1994:276 (Canada: southern Ontario), corrected to *Trypoxylon attenuatum* by Buck, 2004:77.

As *Trypoxylon pennsylvanicum*: Blades and Marshall, 1994:276 (Canada: southern Ontario), corrected to *Trypoxylon attenuatum* by Buck, 2004:77.

### **spp. *hannibalis* Gribodo**

*Trypoxylon hannibalis* Gribodo, 1894b:23, ♀, ♂ (as *Hannibalis*, incorrect original capitalization). Lectotype: ♀, "Algeria: Boghari, Biskra", but actually Tunisia: Tunis area (Genova), designated by de Beaumont, 1950e:263 (Genova). Neotype: ♀ lectotype of de Beaumont, designated by Antropov, 1991b:682. – As *Trypoxylon attenuatum hannibalis*: de Beaumont, 1950e:263 (new status); R. Bohart and Menke, 1976:345 (listed).

### **30. *auropilosum* Tsuneki**

*Trypoxylon auropilosum* Tsuneki, 1976b:79, ♀. Holotype: ♀, Philippines: Tawi Tawi: Tarawakan (ZMK). – Tsuneki, 1980a:8 (in key), 59 (North Borneo; redescription), 1980b:7 (in key), 67 (Philippines; additional description), 1981f:63 (single member of *auropilosum* species group).

### **31. *bakeri* Tsuneki**

*Trypoxylon bakeri* Tsuneki, 1978a:66, ♀. Holotype: ♀, Philippines: Mindanao: Dapitan (USNM). – Tsuneki, 1978a:5 (in key), 1980b:4 (in key), 13 (Philippines; ♂), 1981f:15 (single member of *bakeri* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

### **32. *balabacense* Tsuneki**

*Trypoxylon balabacense* Tsuneki, 1976b:89, ♀. Holotype: ♀, Philippines: Balabac: Dalawan Bay (ZMK). – Tsuneki, 1980b:11 (in key), 114 (Philippines; additional description), 1981f:58 (member of *coloratum* species group).

### **spp. *ovatum* Tsuneki**

*Trypoxylon balabacense ovatum* Tsuneki, 1980a:81, ♀, ♂. Holotype: ♀, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:10, 11 (in key).

### **33. *balteatum* Cameron**

*Trypoxylon balteatum* Cameron, 1889a:43, ♀. Holotype or syntypes: ♀, Mexico: Veracruz: Atoyac (BMNH). – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:306 (revision); R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### **34. *banahao* Tsuneki**

*Trypoxylon banahao* Tsuneki, 1980b:95, ♀. Holotype: ♀, Philippines: Luzon: Mt. Banahao (USNM). – Tsuneki, 1980b:10 (in key), 1981f:69 (member of *tawitawiense* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

### **35. *banoense* Tsuneki**

*Trypoxylon banoense* Tsuneki, 1980b:122, ♀. Holotype: ♀, Philippines: Luzon: Los Baños (USNM). – Tsuneki, 1980b:12 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

### **36. *banvaneum* Tsuneki**

*Trypoxylon banvaneum* Tsuneki, 1979a:47, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:6 (in key).

### 37. *barberi* Richards

*Trypoxylon barberi* Richards, 1934:327, ♀. Holotype: ♀, Guatemala: Livingston (USNM). – R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 38. *basilanense* Tsuneki

*Trypoxylon basilanense* Tsuneki, 1980b:38, ♂, ♀. Holotype: ♂, Philippines: Basilan Island: no specific locality (USNM). – Tsuneki, 1980b:5, 6 (in key), 1981f:23 (member of *appendiculatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

### 39. *basilanum* Tsuneki

*Trypoxylon basilanum* Tsuneki, 1980b:100, ♀. Holotype: ♀, Philippines: Basilan Island: no specific locality (USNM). – Tsuneki, 1980b:10 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

### 40. *beaumonti* Antropov

*Trypoxylon beaumonti* Antropov, 1991b:678, ♀, ♂. Holotype: ♂, Italy: Liguria: San Bartolomeo Mare (G. Pagliano coll.). Paratypes: Austria, France, Germany, Portugal, Switzerland. – Mochi and Luchetti, 1994:15 (Italy: Lazio, Toscana); Pagliano, 1994:16 (Italy: Piemonte, Liguria, Basilicata, Sicilia, Corsica); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Gusenleitner, 1995:162 (Austria: many localities); Schmid-Egger, Risch, and Niehuis, 1995:214 (summary of records from Germany: Rheinland-Pfalz Province); Schmid-Egger, 1995:65 (Germany: Baden-Württemberg); Negrisolo, 1995a:23 (Italy: Veneto); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Ljubomirov, 1999b:51 (Bulgaria: Mt. Vitosha near Sofia); Pagliano and Scaramozzino, 1999:163 (Italy: Piemonte: Borgomale); Blösch, 2000:249 (in Sphecidae Fauna of Germany); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Antropov *in* Bitsch et al., 2001:367 (in Sphecidae Fauna of Western Europe); Ohl et al., 2001:142 (distribution in Germany by provinces); Schmid-Egger, 2001:17 (France: Alsace: Bollenbergs, erroneously listed under *Tachysphex*); Wiśniowski and Szczepko, 2004:94 (in key to Polish *Trypoxylon*, unknown from Poland); Tormos, Asís, Gayubo, Calvo, and Martin, 2005:281 (nest occupancy, preimaginal mortality); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

### 41. *bellardi* Richards

*Trypoxylon bellardi* Richards, 1934:331, ♂. Holotype: ♂, Venezuela: Valera (USNM). – R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 42. *bellum* Tsuneki

*Trypoxylon bellum* Tsuneki, 1979a:103, ♀. Holotype: ♀, Malaya: Pahang: Fraser's Hills (BMNH). – Tsuneki, 1979a:12 (in key).

### 43. *benten* Tsuneki

*Trypoxylon benten* Tsuneki, 1979b:15, ♀. Holotype: ♀, Sri Lanka: Southern Province: Galle District: Kanneliya Jungle (USNM). – Tsuneki, 1979b:4 (in key), 1981d:20 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

### 44. *betremi* Tsuneki

*Trypoxylon betremi* Tsuneki, 1979c:63, ♂. Holotype: ♂, Indonesia: West Java: Malang (RMNH). – Tsuneki, 1979c:10 (in key), 1981f:65 (member of *vardyi* species group).

### 45. *bettotan* Tsuneki

*Trypoxylon bettotan* Tsuneki, 1980a:101, ♀. Holotype: ♀, North Borneo: Bettotan near Sandakan (BMNH). – Tsuneki, 1980a:13 (in key).

#### 46. *biarti* Richards

*Trypoxylon biarti* Richards, 1934:338, ♂. Holotype: ♂, Mexico: Veracruz: Orizaba (MNHN). – R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

#### 47. *bibou* Tsuneki

*Trypoxylon bibou* Tsuneki, 1981a:64, ♀. Holotype: ♀, Papua New Guinea: Mamai Plantation E Port Glasgow (BISH). – Tsuneki, 1981a:8 (in key), 1981f:76 (member of *sacinasium* species group).

#### 48. *bicolor* F. Smith

*Trypoxylon bicolor* F. Smith, 1856:377, ♀. Lectotype: ♀, Singapore (BMNH), designated by Tsuneki, 1978b:3. – F. Smith, 1858a:105 (Singapore); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cameron, 1889c:118 (listed); Bingham, 1897:227 (redescription); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1904d:150 (Philippines); Bingham, 1905:44 (Malaysia: Biserat); R. Brown, 1906:687 (in catalog of Philippine Hymenoptera); R. Perkins, 1910:606 (Hawaiian Islands: Hawaii, Oahu); Bridwell, 1914:17 (currently common in Hawaii), 1917a:273 (nesting in rotten wood), 1920c:329 (cocoon); Swezey, 1921a:488 (Hawaiian Islands: Maui); Maidl, 1925a:390 (Indonesia: Sumatra); Matsumura and Uchida, 1926:41 (Okinawa); F. Williams, 1927:437 (nesting in hollow twigs and wood), 1931:236 (nesting in hollow twigs); Richards, 1934:315 (member of *figulus* species group), 343 (life history summary); Gussakovskij, 1938:4 (China: Kiangsu Province); Krauss, 1944:93 (Hawaii: Molokai Island); Yoshimoto, 1960:333 (Hawaiian Islands), 1964:517 (nesting, larva); R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1978b:3 (redescription), 80 (in key), 81 (variation), 1979a:152 (separation of *Trypoxylon bicolor* and *petiolatum*), 158 (redescription; Singapore, Malaya, Thailand), 1979a:16 (in key), 1979c:7 (in key), 38 (Sumatra, Java), 1980a:14 (in key), 109 (Borneo), 1980b:8, 9 (in key), 84 (Philippines; additional description), 1981f:75 (member of *bicolor* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Pu, 1986:8 (China); Hua, 1989:117 (China); Wu and Zhou, 1996:102 (revision in Economic Insect Fauna of China); Li and He, 1998b:398 (China: Longwangshan Nature Reserve), 2004:1103 (in hymenopterous fauna of Zhejiang Province, China); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon bicolor marginatum* Tsuneki, 1976b:76, ♀, primary homonym of *Trypoxylon marginatum* Cameron, 1912. Holotype: ♀, Philippines: Balabac: Dalawan Bay (ZMK). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1980a:2.

*Trypoxylon bicolor dorsale* Tsuneki, 1977i:4, primary homonym of *Trypoxylon dorsale* Tsuneki, 1977h:5 (= *Trypoxylon eximium*). Substitute name for *Trypoxylon bicolor marginatum* Tsuneki, 1976. Synonymized with *Trypoxylon bicolor* by Tsuneki, 1980a:2.

#### *ssp. ceylonicum* Tsuneki

*Trypoxylon bicolor ceylonicum* Tsuneki, 1979a:158, ♀, ♂. Holotype: ♂, Sri Lanka: Ambacotta (Basel). – Tsuneki, 1979a:16 (in key), 1979b:4 (in key), 16 (Sri Lanka), 1981d:16 (Sri Lanka), 19 (in key).

#### 49. *bidentatum* W. Fox

*Trypoxylon bidentatum* W. Fox, 1891c:143, ♀, ♂. Lectotype: ♀, USA: Oregon: Mt. Hood (ANSP), designated by Cresson, 1928:52. – Peckham, 1892:78 and 86 (life history); W. Fox, 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Peckham, 1905:... (...); Rohwer, 1909g:378 (Colorado: Boulder); Richards, 1934:316 (revision), 342 (life history summary); Sandhouse, 1940:162 (revision); Krombein in Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); F. Parker and R. Bohart, 1966:95 (California: Boca in Nevada County, Davis, Nevada: Mustang, Verdi; parasite: *Trichrysis doriae* Gribodo, Chrydidae); R. Bohart and Menke, 1976:345 (listed); Krombein, 1979b:1642 (in catalog of North American Hy-

menoptera); Antropov, 2003:438 (in key to North American species of *figulus* group); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 54 (first record from Canada: Ontario: Smith Beay near Picton).

*Trypoxylon morrisoni* Richards, 1934:319, ♀. Holotype: ♀, USA: Nevada: no specific locality (MNHU). Synonymized with *Trypoxylon bidentatum* by Sandhouse, 1940:162.

#### 50. *bidenticulatum* Tsuneki

*Trypoxylon bidenticulatum* Tsuneki, 1979a:65, ♀. Holotype: ♀, Vietnam: Fyan (BISH). – Tsuneki, 1979a:8 (in key).

#### 51. *bifoveatum* Tsuneki

*Trypoxylon bifoveatum* Tsuneki, 1979a:20, ♀, ♂. Holotype: ♀, Malay Peninsula: Pahang in Frazer's Hills (BMNH). – Tsuneki, 1979a:3 (in key), 1981d:33 (India: Sikkim), 61 (in key), 1981f:44 (member of *bifoveatum* species group).

#### 52. *bilobatum* Tsuneki

*Trypoxylon bilobatum* Tsuneki, 1961b:385, ♂. Holotype: ♂, Thailand: Mae Hoi (Osaka). – Tsuneki, 1974b:630 (Thailand); R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1979a:16 (in key), 163 (Laos; redescription).

#### 53. *biputeolum* Tsuneki

*Trypoxylon biputeolum* Tsuneki, 1979a:22, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:3 (in key), 1981f:44 (member of *bifoveatum* species group).

#### 54. *bishopi* Tsuneki

*Trypoxylon bishopi* Tsuneki, 1979a:55, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:7 (in key).

#### 55. *bismarckianum* Tsuneki

*Trypoxylon bismarckianum* Tsuneki, 1977h:7, ♀, ♂ (♂ = *Trypoxylon kalilicum*). Holotype: ♀, Bismarck Islands: New Britain: Vaisisi (ZMK). – Tsuneki, 1981a:9 (in key), 26 (additional description; ♂ described in 1977 is a different species), 1982a:46 (Bismarck Archipelago).

#### 56. *bituberculatum* Tsuneki

*Trypoxylon bituberculatum* Tsuneki, 1977h:17, ♀. Holotype: ♀, New Guinea: Huon Gulf: Sattelberg (TMB). – Tsuneki, 1978b:28 (Indonesia: Misool Island), 1981a:5 (in key), 23 (New Guinea; additional description), 1981b:100 (in key), 104 (Australia: Queensland); Cardale, 1985:264 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

#### *ssp. biroi* Tsuneki

*Trypoxylon bituberculatum biroi* Tsuneki, 1977b:18, ♀. Holotype: ♀, New Guinea: Friedrich-Wilhelm-Hafen (TMB). – Tsuneki, 1980a:114 (discussion), 1981a:5 (in key), 27 (same locality; additional description).

#### *ssp. mysolense* Tsuneki

*Trypoxylon bituberculatum mysolense* Tsuneki, 1980a:114, ♀. Holotype: ♀, Indonesia: Misool Island: no specific locality (OXUM). – Tsuneki, 1980a:116 (in key), 1981a:97 (additional description).

As *Trypoxylon gracillimum*: Tsuneki, 1978:26 (♀ only), corrected to *Trypoxylon bituberculatum mysolense* by Tsuneki, 1980a:2

#### 57. *borneanum* Tsuneki

*Trypoxylon borneanum* Tsuneki, 1980a:19, ♀. Holotype: ♀, Sarawak: Mt. Mulu (BMNH). – Tsuneki, 1980a:4 (in key).

#### 58. *bourgeoisii* Strand

*Trypoxylon bourgeoisii* Strand, 1911a:155, ♀. Holotype: ♀, Ecuador: Loja (MNHN). – R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**59. *brasilianum* de Saussure**

*Trypoxylon brasilianum* de Saussure, 1867:84, ♀. Holotype or syntypes: ♀, Brazil: Bahia (NHMW). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:2821 (member of *fabricator* species group); R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**60. *braunsi* Arnold**

*Trypoxylon braunsi* Arnold, 1924:22, ♂ as *Braunsi*, incorrect original capitalization). Holotype: ♂, South Africa: Cape Province: Willowmore (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:96 (in key), 122 (revision); R. Bohart and Menke, 1976:345 (listed).

**61. *breviclypeatum* Tsuneki**

*Trypoxylon breviclypeatum* Tsuneki, 1979a:172, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:18 (in key).

**62. *brevipenne* de Saussure**

*Trypoxylon brevipenne* de Saussure, 1867:85, ♀. Holotype or syntypes: ♀, Guinea: no specific locality (NHMW or MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Arnold, 1924:16 (revision), 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:340 (member of *brevipenne* species group); Leclercq, 1965a:82 (in key), 101 (revision, Zaire); R. Bohart and Menke, 1976:345 (listed); Antropov, 1993b:53 (Central African Republic); Simon Thomas and Wiering, 1993:406 (Cape Verde Islands: Santiago Island).

**63. *breviventre* Arnold**

*Trypoxylon breviventre* Arnold, 1959:319, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:86 (in key), 108 (not examined); R. Bohart and Menke, 1976:345 (listed).

**64. *bridwelli* Sandhouse**

*Trypoxylon bridwelli* Sandhouse, 1940:169, ♂. Holotype: ♂, USA: Texas: Brownsville (USNM). – Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:345 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Coville, 1990:2 (status of the species uncertain).

**65. *buddha* Cameron**

*Trypoxylon buddha* Cameron, 1889c:119, sex not indicated. Syntypes: ♀, India: Westa Bengal: Barrackpore 20 km N Bengal (OXUM). – Bingham, 1897:225 (redescription); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Cameron, 1889c:118 (listed); Richards, 1934:338 (member of *brevipenne* species group); R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1978b:33 (redescription), 76 (in key), 1979a:3 (in key), 19 (citation), 1979b:3 (in key), 8 (Sri Lanka), 1980b:4 (in key), 16 (relationships to *Trypoxylon propinquum*), 21 (Philippines: additional description), 1981d:18 (in key), 22 (India), 1981f:41 (member of *buddha* species group).

*Trypoxylon monstrosusum* Tsuneki, 1974b:633, ♂. Holotype: ♂, Thailand: Bangkok (T. Tano coll., Fukui). Synonymized with *Trypoxylon buddha* by Tsuneki, 1978b:36. – R. Bohart and Menke, 1976:630 (listed).

*Trypoxylon buddhae* [sic] *tarawakanum* Tsuneki, 1976b:92, ♀. Holotype: ♀, Philippines: Tawi Tawi: Tarawakan (ZMK). Synonymized with *Trypoxylon buddha* by Tsuneki, 1978b:36. – Tsuneki, 1977i:4 (corrected to *buddha tarawakanum*).

**66. *buehleri* Tsuneki**

*Trypoxylon buehleri* Tsuneki, 1979c:45, ♀. Holotype: ♀, Indonesia: Sumba Island: Central District: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:8 (in key).

**67. *bukidnon* Tsuneki**

*Trypoxylon bukidnon* Tsuneki, 1980b:103, ♀. Holotype: ♀, Philippines: Mindanao: Bukidnon: Mt. Katanglad (BISH). – Tsuneki, 1980b:11 (in key).

#### 68. *bum* Tsuneki

*Trypoxylon bum* Tsuneki, 1981d:59, ♀. Holotype: ♀, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:63 (in key).

#### 69. *burmaense* Tsuneki

*Trypoxylon burmaense* Tsuneki, 1981d:38, ♂. Holotype: ♂, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:41, 61 (in key), 1981f:35 (member of *vechti* species group).

#### 70. *cagrurum* Tsuneki

*Trypoxylon cagrurum* Tsuneki, 1979a:91, ♀. Holotype: ♀, Thailand: Doi Suthep (BISH). – Tsuneki, 1979a:11 (in key).

#### 71. *caldesianum* Richards

*Trypoxylon caldesianum* Richards, 1934:321, ♀, ♂. Holotype: ♀, Colombia: Caldes (depository not indicated). – R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

#### 72. *cameronii* Dalla Torre

*Trypoxylon palliditarse* Cameron, 1889a:48, ♂, junior primary homonym of *Trypoxylon palliditarse* de Saussure, 1867. Lectotype: ♂, Mexico: Tabasco: Teapa (BMNH), designated by ... – Bodkin, 1918:317 (British Guiana).

*Trypoxylon cameronii* Dalla Torre, 1897:702. Substitute name for *Trypoxylon palliditarse* Cameron, 1889. – Richards, 1934:297 (revision); R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

*Trypoxylon tabascense* Strand, 1910a:169, footnote. Substitute name for *Trypoxylon palliditarse* Cameron, 1889.

#### 73. *cameroni* Tsuneki (preoccupied)

*Trypoxylon cameroni* Tsuneki, 1980a:58, ♀, primary homonym of *Trypoxylon cameronii* Dalla Torre, 1897. Holotype: ♀, Sarawak: Mt. Mulu (BMNH). – Tsuneki, 1980a:8 (in key).

#### 74. *canlaon* Tsuneki

*Trypoxylon canlaon* Tsuneki, 1980b:77, ♀. Holotype: ♀, Philippines: Negros: Mt. Canlaon (AEI). – Tsuneki, 1980b:8 (in key).

#### 75. *capense* Cameron

*Trypoxylon capense* Cameron, 1905g:260, sex not indicated. Holotype or syntypes: South Africa: Cape Province: Dunbrody (BMNH). – Arnold, 1924:18 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:345 (listed).

#### 76. *capillatum* Tsuneki

*Trypoxylon capillatum* Tsuneki, 1979b:9, ♀. Holotype: ♀, Sri Lanka: Trincomalee (USNM). – Tsuneki, 1979b:4 (in key), 1981d:8 (Sri Lanka), 19 (in key), 1981f:28 (single member of *capillatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

#### 77. *capitale* Richards

*Trypoxylon capitale* Richards, 1934:328, ♀, ♂. Holotype: ♂, Argentina: Salta: Salta (MNHU). – R. Bohart and Menke, 1976:345 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

#### 78. *carcinum* Leclercq



*Trypoxylon carcinum* Leclercq, 1965a:104, ♀, ♂. Holotype: ♀, Zaire: Rwankwi N Lake Kivu (MRAC). Paratypes: Rwanda. – Leclercq, 1965a:s84 (in key); R. Bohart and Menke, 1976:345 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

#### 79. *carinatum* Say

*Trypoxylon carinatum* Say, 1837:374, ♂ (as *carinatus*, incorrect original termination). Holotype or syntypes: USA: Indiana (lost). – F. Smith, 1856:381 (listed); Le Conte, 1859b:757 (original description copied); Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:418 (listed); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); W. Fox, 1891c:147 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae, description of ♀); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:329 (not examined), 1936:463 (member of *scutatum* species group); Brimley, 1938:443 (North Carolina: Raleigh); Sandhouse, 1940:153 (revision); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein in Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); Krombein, 1954a:5 (West Virginia: Lost River State Park), 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:273 (Maryland: Plummers Island near Washington, D.C.), 1967b:228 (life history observed in artificial nests); R. Bohart and Menke, 1976:345 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 54 (first record from Canada: Ontario: list of localities).

#### 80. *cariosum* Arnold

*Trypoxylon cariosum* Arnold, 1959:316, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:94 (in key), 119 (citation); R. Bohart and Menke, 1976:345 (listed).

#### 81. *carpenteri* Richards

*Trypoxylon carpenteri* Richards, 1933:215, ♂, ♀. Holotype: ♂, Uganda: Nkosi Island in Lake Victoria (BMNH). – Richards, 1934:340 (member of *carpenteri* species group); Leclercq, 1965a:91 (in key), 116 (revision); R. Bohart and Menke, 1976:345 (listed).

#### 82. *castoris* Leclercq

*Trypoxylon castoris* Leclercq, 1965a:125, ♀, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:98 and 99 (in key); R. Bohart and Menke, 1976:345 (listed).

#### 83. *cataractae* Arnold

*Trypoxylon cataractae* Arnold, 1924:13, ♂, ♀. Syntypes: Zimbabwe: Cloudlands in Vumbu Mts., Salisbury, Victoria Falls (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:92 (in key), 116 (revision, Zaire); R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1981f:30 (single member of *cataractae* species group; as *catalactae*); Antropov, 1993b:53 (Zimbabwe);.

#### *ssp. madecassum* Arnold

*Trypoxylon cataractae madecassum* Arnold, 1945:9, ♀, ♂. Syntypes: Madagascar: Ranomafana (MNHN). – R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1981d:83 (Madagascar; additional description); Madl, 1997:820 (Madagascar: Nosy Boraha Island), 821 (in checklist of Nosy Boraha Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

#### 84. *catinum* Leclercq

*Trypoxylon catinum* Leclercq, 1965a:126, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:98 and 99 (in key); R. Bohart and Menke, 1976:345 (listed).

#### 85. *cavallum* Leclercq

*Trypoxylon cavallum* Leclercq, 1965a:125, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:98 and 99 (in key); R. Bohart and Menke, 1976:345 (listed).

**86. centrale W. Fox**

*Trypoxylon centrale* W. Fox, 1895c:267, ♀. Syntypes: ♀, Mexico: Baja California Sur: San José del Cabo (depository?). – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:2821 (member of *fabricator* species group); R. Bohart and Menke, 1976:345 (listed); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**87. cavum Tsuneki**

As *Trypoxylon maculiventre*: Tsuneki, 1979c:6 (in key), 29 (Indonesia: Java, Sumatra), corrected to *Trypoxylon cavum* by Tsuneki, 1980a:2 and 45.

*Trypoxylon cavum* Tsuneki, 1980a:44, ♀, ♂. Holotype: ♀, Indonesia: West Java: Middle Djampang: Mt. Tjisoeroe (RMNH).

**88. cheesmanae Tsuneki**

*Trypoxylon cheesmanae* Tsuneki, 1979c:11, ♀. Holotype: ♀, Indonesia: Java: Tjibodas (BMNH). – Tsuneki, 1979c:4 (in key).

**89. chichidzimaense Tsuneki**

*Trypoxylon chichidzimaense* Tsuneki, 1973a:12, ♀. Holotype: ♀, Japan: Bonin Islands: Chichijima Island (Y. Haneda coll.). – Haneda, 1973:30 (Japan: Bonin Islands: Chichijimas Islands); Tsuneki, 1973e:33 (in key), 1981a:5, 7 (in key), 52 (redescription); Bohart and Menke, 1976:345 (listed); Tsuneki, 1981e:6, 7 (in key), 82 (redescription), 1984a:6 (description of ♂; member of the *vardyi* species group; Ogasawara = Bonin Islands); R. Bohart and Menke, 1976:345 (listed).

**90. chichimecum de Saussure**

*Trypoxylon chichimecum* de Saussure, 1867:83, ♀. Syntypes: Mexico: including one from Mexico City (NHMW or MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cameron, 1889a:47 (listed); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:314 (not examined); R. Bohart and Menke, 1976:345 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**91. chimum Tsuneki**

*Trypoxylon chimum* Tsuneki, 1981a:39, ♀. Holotype: ♀, New Guinea: Chimbu District: Kundiawa (BISH). – Tsuneki, 1981a:5 (in key).

**92. chingi Tsuneki**

*Trypoxylon chingi* Tsuneki, 1971g:10, ♀, ♂. Holotype: ♂, Taiwan: Chiai Prefecture: Kansitaku, now Kuanghua (originally K. Tsuneki coll., now USNM). – R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1981c:4, 7 (in key), 17 (Taiwan; additional description); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**93. chirindense Arnold**

*Trypoxylon chirindense* Arnold, 1936:35, ♂ (as *chirindensis*, incorrect original termination). Holotype: ♂, Zimbabwe: Chirinda Forest (SAM). – Arnold, 1943:71 (Zaire: Albert National Park); Leclercq, 1955:406 (Rwanda), 1965a:93 (in key), 117 (revision; Burundi, Uganda, Zaire); R. Bohart and Menke, 1976:345 (listed).

**94. choiseulense Tsuneki**

*Trypoxylon choiseulense* Tsuneki, 1981a:20, ♀. Holotype: ♀, Solomon Islands: Choiseul Island: Kolombangara River (BISH). – Tsuneki, 1981a:4 (in key).

**95. chosenense Tsuneki**

*Trypoxylon chosenense* Tsuneki, 1956g:25, ♀, ♂. Holotype: ♀, Korea: Shoyosan = Mount Shoyo (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:5, 10 (in key), 1981e:3 (in key), 13 (Japan; redescription), 1981f:30 (single member of *chosenense* species group); R. Bohart and Menke, 1976:345 (listed); Tano, 1995:43 (holotype in K. Tsuneki collection, as *chosennense*); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

#### 96. *cidicum* Tsuneki

*Trypoxylon cidicum* Tsuneki, 1980b:75, ♀, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:8 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

#### 97. *cimmolum* Tsuneki

*Trypoxylon cimmolum* Tsuneki, 1980a:67, ♀. Holotype: ♀, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:8 (in key).

#### 98. *cinctellum* Richards

*Trypoxylon cinctellum* Richards, 1934:299, ♀. Holotype: ♀, Panama: Barro Colorado Island (USNM). – R. Bohart and Menke, 1976:345 (listed); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

#### 99. *cindjun* Tsuneki

*Trypoxylon cindjun* Tsuneki, 1980a:89, ♀. Holotype: ♀, Sarawak: Mt. Mulu (BMNH). – Tsuneki, 1980a:11 (in key).

#### 100. *clarkei* Krombein

*Trypoxylon clarkei* Krombein, 1962a:9, ♂, ♀. Holotype: ♂, USA: Virginia: Dunn Loring (USNM). – Krombein, 1963f:273 (Maryland: Plummers Island near Washington, D.C.), 1967b:229 (life history observed in artificial nests); R. Bohart and Menke, 1976:346 (listed); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 54 (first record from Canada: Ontario: list of localities).

#### 101. *clavicerum* Lepeletier de Saint Fargeau and Audinet-Serville

*Trypoxylon clavicerum* Lepeletier de Saint Fargeau and Audinet-Serville, 1828:750, ♀, ♂. Syntypes: France: Paris area (depository unknown). – Curtis, 1837:pl.652 (illustration); Shuckard, 1837a:118 (in revision of British Aculeata); von Siebold, 1839:50 (Germany: Danzig, now Poland: Gdańsk); Dahlbom, 1844:279 (in revision of Sphecidae and Pompilidae), 1845:509 (in key); Lepeletier de Saint Fargeau, 1845:229 (revision); Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony); F. Smith, 1849a:2373 (Great Britain: Devonshire); Wissmann, 1849:14 (Germany: Kingdom of Hannover: Hannover, Harz Mts, Münden, nest and prey); Tischbein, 1850:9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); Wesmael, 1852:270 (Belgium: Bruxelles); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg nd Wiesbaden, as *clavicorne*); F. Smith, 1856:376 (listed); Kawall, 1857:25 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:133 (in revision of fossorial wasps of Nassau Region, Germany); A. Costa, 1858:20 (Italy: Campania: Monti Partenii in Benevento Region); Taschenberg, 1858:99 (Germany); Assmus, 1859:616 (Russia: Moscow Oblast); Schenck, 1860:147 (Germany: Nassau region); Brischke, 1862:105 (Germany: Preussen Province, now Poland: Pomorze Region); Kirchner, 1867:223 (in catalog of European Hymenoptera); Palma, 1867:41 (Italy: Sicilia settentrionale); Schenck, 1867a:353 (Germany: Nassau Region); Dietrich, 1868:362 (Switzerland: Zurich Canton); Wierzejski, 1868:117 (common everywhere); Aichinger, 1870:315 (Austria: Tirol); Bold, 1870:148 (Great Britain: Northumberland and Durham); Thomson, 1870:251 (in revision of Swedish wasps); A. Costa, 1871b:46 (in revision of Italian Sphecidae); Ivanov, 1872:152 (Ukraine: Kharkov area); Schlechtendal, 1872:36 (Germany: Sachsen: Zwickau); Dours, 1874:151 (in catalog of Hymenoptera of France); Wierzejski, 1874:261 (Ukraine: Podole); Marquet, 1875:209 (France: Languedoc); Taschenberg, 1875:379 (Germany: Halle); Beuthin, 1876:230 (Germany: Hamburg area); Girard, 1879:932 (morphology and habits); Kohl, 1880:135 (Austria: Tirol, and Italy: Trentino–Alto Adige); Siebke, 1880:67 (Norway); Marquet, 1881:184 (southern France); E. Saunders, 1881:165 (Portugal:

on road from Silves to Monchique); A. Costa, 1883a:58 (Italy: Sardegna); Kohl, 1883e:657 (Switzerland); Sickmann, 1883:76 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (England: Essex: Colchester area); von Heyden, 1884:121 (Germany: Frankfurt am Main area); Kohl, 1885a:193 (in key to European *Trypoxylon*), 198 (in revision of European species), 203 (in checklist of world *Trypoxylon*); De Stefani Perez, 1886:172 (Italy: Sicilia: monte di Renda near Palermo); Wüstnei, 1886:37 (Germany: Schleswig-Holstein); Gasperini, 1887:14 (Dalmatia: Spalato, now Croatia: Split); Ed. André, 1888:209 (in revision of Sphecidae of Europe and Algeria), 17\* (bibliographic references); Brischke, 1888b:100 (Germany: Preussen Province, now Poland: Pomorze Region); Kohl, 1888b:723 (Austria: Tirol, now Italy: Alto Adige); Riggio and De Stefani Perez, 1888:149 (Italy: Ustica Island); Brischke, 1889:204 (Germany: Steegen E Danzig, now Poland: Stegna E Gdańsk); Kohl, 1893a:29 (Austria: Niederösterreich); Sickmann, 1893:81 (Germany: Niedersachsen: Iburg, list of prey); De Stefani Perez, 1894:216 (Italy: Sicilia); Krieger, 1894:10 (Germany: Kingdom of Saxony); De Stefani Perez, 1895:227 (in catalog of Sicilian Hymenoptera); Acloque, 1897:92 (in Sphecidae Fauna of France and Algeria); Borries, 1897:73 (nesting habits); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (Hungary, some localities are in today's Slovakia); Strand, 1898bb:95 (Norway); Antiga and Bofill, 1904:13 (Spain: Cataluña Province); Aurivillius, 1904:278 (in revision of Swedish Sphecidae); W. Schulz, 1904b:102 (Czechoslovakia; Greece: Corfu Island); Kubes, 1905:84 (Czech Republic: Obora, Sušice); Vängel, 1905:166 (Hungary); Mercet, 1906c:465 (in key to Palearctic species); W. Schulz, 1906:212 (correction to Dalla Torre: Lepeletier de Saint Fargeau and Serville are authors of the name); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Cavro, 1910:685 (France: Département du Nord); Dittrich, 1911b:26 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); Birula, 1912:546 (Ukraine: Radomysl near Kiev); Hallett, 1912:94 (Great Britain: Glamorgan County); Schirmer, 1912:168 (Germany: Berlin area); Szilády, 1913:88 (Hungary: Nagyenyed, Radnai havasok, Vihnye, Vizakna); Alfken, 1914:284 (NW Germany); Dusmet y Alonso, 1915:87 (Spain: Aragón); Kerenskiy, 1919:37 (Russia: Penza Government); O. Meyer, 1919:157 (Germany: Posen Province, now Poland: Poznań Region); Łoziński, 1920:122 (Poland: Kraków); Strand, 1920:23 (Germany: Berlin-Dahlem); A. Wagner, 1920:37 (Germany: Lower Elbe region); Berland, 1921:533 (Greece); Dubois, 1921c:217 (in key to Belgian Sphecidae); Maidl, 1922:73 (Albania); Lauterborn, 1924:287 (Germany: Baden-Württemberg: Kaiserstuhl); R. Perkins, 1924a:229 (Great Britain: Devon); Berland, 1925d:151 (in Sphecidae Fauna of France); Bischoff, 1925:302 (Latvia: Jelowka, Tauerkalln, Wezkukkul; Poland: Białowieża and Grajewo area); Blüthgen, 1925:166 (Germany: Saale River valley: Roßbach); Coulon, 1925:126 (France: Evreux; Morocco: Tanger); Hémon, 1926:199 (France: Finistère: Fouesnant); F. Werner, 1927:67 (Austria: Niederösterreich: River Kamp valley); Chevalier, 1929a:17 (nesting habits); Grandi, 1929:289 (Italy: Toscana: valle della Limentra); Stelfox, 1929:14 (new to Ireland: Powerscourt deer-park); Hamm and Richards, 1930:120 (summary of nesting habits), 126 (list of prey); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Butterfield and Fordham, 1931:155 (Great Britain: Yorkshire); Grandi, 1931:57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Spooner, 1931:15 (Great Britain: Cambridgeshire); Bondroit, 1932:39 (Belgium: Forêt de Soignes); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Jones, 1932a:82 (Great Britain: Nottinghamshire), 1932b:233 (Great Britain: Wicken Fen); Bondroit, 1933:32 (Belgium: Bruxelles); Merisuo, 1933a:60 (Finland: city of Turku; as *clavigerum*); E. Nielsen, 1933:278 (summary of nesting habits); Balles, 1934:29 (Germany: Baden-Württemberg: Fautenbach, Hopfengarten); Bondroit, 1934:60 (Belgium: Boendael); Richards, 1934:315 (member of *figulus* species group); Dusmet y Alonso, 1935:73 (Spain: Leon), 80 (Spain: Ambel); Forsius in Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Minkiewicz, 1935:216 (Poland: Lake Garbaś 20 km W Suwałki); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:130 (Poland: Łowicz, Opatów); Gussakovskij, 1936:661 (redescription); Maréchal, 1936:384 (review of literature on nesting habits); Dulac, 1937:17 (France: Saône-et-Loire: Corchanu, Saint-Laurent d'Andenay); Struve, 1937:150 (Germany: Island of Borkum); Zavadil, Šustera, and Baťa, 1937:221 (in catalog of Sphecidae of Czechoslovakia);

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(in Sphecid Fauna of Czechoslovakia); Haeseler, 1972:155, 165, 175, 200 (Germany: Schleswig-Holstein; anthropogenic habitats); Kazenas, 1972b:155 (Kazakhstan); Kofler, 1972:108 (Austria: eastern Tirol); Scobiola-Palade, 1972a:150 (Romania: delta of Danube: Caraorman); Simon Thomas, 1972:184 (France: Landes); de Beaumont, Bytinski-Salz and Pulawski, 1973:20 (Israel); Erlandsson, 1974:75 (Italy); Lefeber, 1975b:120 (Netherlands: Schiepersberg); Lomholdt, 1975b:31 (Denmark: Anholt Island); R. Bohart and Menke, 1976:346 (listed); Cretin and Robert, 1976:45 (France: Doubs: Chassagne-Saint Denis); Jacob-Remacle, 1976:235 (Belgium: Liège, nest structure and mortality); Lomholdt, 1976:264 (in Sphecid Fauna of Fennoscandia and Denmark); Simon Thomas, 1976:5 (France: Lot-et-Garonne); Banaszak, 1977:112 (Poland: Rogalin near Poznań); Georghiou, 1977:193 (Cyprus); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Schmidt, 1977:96 (Germany: Schwarzwald); Guichard, 1978:271 (Greece); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:253 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:417 (Germany: Württemberg); Benedek, 1979:232 (Hungary: Bakony Hills); Haeseler, 1979:10 (Germany: Niedersachsen: 10 km S Oldenburg); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 85 (Netherlands: distribution map); Leclercq, Gaspar and Verstraeten, 1979:map 1420 (Belgium); Marchal and Leclercq, 1979:10 (Belgium: Gembloux); Schmidt, 1979a:55 (Germany: Ost-Holstein); Schwammberger, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve); Casolari and Casolari Moreno, 1980:121 (specimens in M. Spinola collection); Jacob-Remacle and Leclercq, 1980:193 (Belgium: gardens in Liège); Pagliano, 1980:129 (Italy: Piemonte); Richards, 1980:44 (in key to Sphecidae of British Isles); Cooter, 1981:46 (Great Britain: Herefordshire); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Józán, 1981:305 (Hungary: Hortobágy National Park); Skibińska, 1981:358 (Poland: Warszawa-Białoleka); Tsuneki, 1981e:86 (redescription of European populations), 1981f:46 (single member of *clavicerum* species group); Woydak, 1981:41 (Germany: Westfalen: Hamm); Axelsson, 1982:80 (Sweden); Donath, 1982:214 (Germany: Cottbus Bezirk); Leclercq, 1982a:124 (Belgium: Liège); Skibińska, 1982:123 (Poland: Warszawa area); Dollfuss, 1983b:12 (Austria); Janzon, 1983:171 (Sweden: Öland); Lefeber, 1983a:85 (Netherlands: Waddendistrict: Schiermonnikoog Island); Riemann, 1983:86 (Germany: Bremen-Daverden area); Coville, 1984:256 (Great Lakes region of United States and of Canada); Gayubo, 1984b:89 (Spain: Salamanca Province), 1984c:372 (Portugal: El Algarve Province); Gayubo and Tormos, 1984:17 (Spain: Valencia); Haack, Tschardtke, and Vidal, 1984:133 (Germany: Hamburg area); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Lefeber, 1984:29 (Netherlands: Maastricht); Schmidt, 1984:293 (Federal Germany: Baden-Württemberg); Veenendaal, 1984:19 (Netherlands: Amsterdam); Schmidt and Westrich, 1984:240 (Federal Germany: Rheinland-Pfalz: Bad Münster); Archer, 1985:96 (Great Britain: Suffolk); Haeseler, 1985a:351 (Federal Germany: Schleswig-Holstein), 355 (prey); Jacob-Remacle, 1985:408 (Belgium; second occupant in a composite nest); Józán, 1985b:57 (Hungary S Lake Balaton), 84 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:97 (Romania: delta of Danube); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:62 (Germany: Südpfalz); Gayubo, 1986b:38 (Spain: Andalucía), 1986c:34 (Spain: Zamora Province); Gayubo and Sanza, 1986:54 (Spain: Burgos, Soria); Gayubo and Tormos, 1986a:18 (Spain: Castellón de la Plana); Jacob-Remacle, 1986:110 (Belgium; trap-nests); Józán, 1986:371 (Hungary: Kiskunság National Park); Nemkov, 1986:99 (Russia: Siberia: Irkutsk Oblast'); Skibińska, 1986b:151, 154 (Poland: suburbs of Warszawa), 160 (gardens), 162 (urban parks), 164 (streetside green), 168 (green areas of housing estates), 174 (various green urban habitats); Vikberg, 1986:76 (Finland); Schmidt and Westrich, 1987:365 (Federal Germany: Mainz area); Archer, 1988a:33 (Great Britain: Bernwood Forest near Oxford), 1988b:27 (Great Britain: Yorkshire: Strensall Common); Chevin, 1988:15 (France: La Manche Department); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Gayubo and Mingo, 1988:88 (Spain); Karsai, 1988:100 (Hungary: Kiskunság National Park); Kowalczyk, 1988a:45 (Poland: Rogów), 1988b:65 (Poland: environs of Łódź); Riemann, 1988:223 (Germany: Bremen area); Wolf, 1988b:141 (Germany: Rheinland-Westfalen); Archer, 1989a:131 (Great Britain: York: found before coniferization); Bałazy, Banaszak, and Michalski, 1989:119

(Poland: Wielkopolski National Park); Jacobs, 1989:14 (Germany: Mecklenburg-Vorpommern); Józán, 1989:101 (Hungary: Tihany Nature Reserve); Pádr *in* Šedivý, 1989a:16 (in catalog of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:97 (Belorussia: Berezinskiy Nature Reserve); Scobiola-Palade, 1989:88 (Romania: delta of Danube, as *clavicerus*); Skibińska, 1989a:204 (Poland: Warszawa area); Weiffenbach, 1989:108 (Germany: Hessen: Gießen area); Archer, 1990b:136 (Great Britain: city of Leicester), 1990c:15 (Great Britain: Leicestershire); Barbier, Rasmont, and Wahis, 1990:32 (Belgium: Hainaut); Gayubo, Asís, and Tormos, 1990a:19 (Spain); Jacobs and Oehlke, 1990:171 (new records from Democratic Germany); Kowalczyk, 1990:291 (Poland: Góry Świętokrzyskie); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pádr, 1990:82 (Czech Republic: Praha area); Pagliano, 1990:109 (in catalog of Italian Sphecidae); Rohe, 1990:1050 (Germany: Rheinland-Pfalz: Lenneberg forest); Schwammberger and Priesner, 1990:541 (Austria: Kärnten); von der Heide and Witt, 1990:64 (Germany: Niedersachsen); Dollfuss, 1991:122 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:404 (Italy: Puglia); Jakubzik, 1991:75 (Germany: Köln); Kowalczyk, 1991a:90, 93, 99 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Jakubzik and Cölln, 1992:121 (Germany: Rheinland-Pfalz; reared from artificial nests); Józán, 1991:603 (Hungary: Bátorliget Nature Reserve); Negrisoló, 1991:319 (Italy: Udine Province); Nilsson, 1991:83 (Sweden: Lake Mälaren); N. Schneider, 1991:93 (Luxemburg); Archer, 1992a:56 (Great Britain: Leicestershire); Delarze, 1992:68 (Switzerland: Valais: Les Follatères); Józán, 1992a:229 (Hungary: Béda-Karapanca Protected Area), 1992b:173 (Hungary: Boronka-melléki Protected Area), 1992c:289 (Hungary: Zselic Hills); N. Schneider and Jacob-Remacle, 1992:43 (Luxemburg), 53 (nest structure); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:23 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Archer, 1993c:39 (Great Britain: Yorkshire); Hohmann, La Roche, Ortega, and Barquín, 1993:242 new to Canary Islands: Tenerife); Kuhlmann, 1993:76 (Germany: known from Westfalen); Luig, 1993:45 (Estonia); Sorg and Wolf, 1993:61 (Germany: Rheinland-Westfalen: Nature Reserve Die Spey); Takahashi, 1993:3 (Japan: Hachijo-Jima Island); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Kowalczyk, 1994:74 (Poland: Łagiewniki forest in Łódź); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Archer, 1995a:23 (Great Britain: Yorkshire: frequency); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Papp and Józán, 1995:146 (Hungary: Sikfőkút oak forest); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Riemann, 1995:52 (Germany: Bremen); Schmid-Egger, Risch, and Niehuis, 1995:214 (summary of records from Germany: Rheinland-Pfalz Province); Shlyakhtenok, 1995:194 (Belarus: Berezinsky Nature Reserve); Skibińska, 1995:423, 425 (Poland: pine forest in Białowieża Primeval Forest); Archer, 1996b:37 (Great Britain: Nottinghamshire: Sherwood Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Harvey and Plant, 1996:68 (Great Britain: summary of records from Essex); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996b:401 (Germany: Rheinland-Pfalz); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Shlyakhtenok, 1996:304 (Belarus: Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Woydak, 1996:43 (Germany: Westfalen: summary of distribution and life history); Archer, 1997a:48 (Great Britain: Yorkshire: Burton Leonard Lime Quarries); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Celary, 1998:211 (Poland: Babia Góra National Park); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); Gonzáles, Gayubo, and Torres, 1998:74, 75 (Spain: Valladolid Province); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Harriersand Island in Weser River and Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Salzmann-Wandeler, 1998a:98 (Switzerland: Luzern Canton: Sempach); van der Smissen, 1998:70 (Germany: Mecklenburg-Vorpommern, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gayubo, García, Torres, and Gon-

zález, 1999:90 (Spain: Soria Province); Gonzáles, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Generani, Pagliano, Scaramozzino, and Strumia, 1999:80 (Italy: Toscana: Isola di Montecristo); Gusenleitner, 1999:599 (Austria: Vorarlberg: Rheinhof W Hohenems); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Ljubomirov, 1999b:51 (Bulgaria: Mt. Vitosha near Sofia); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:179 (Estonia); Pagliano and Scaramozzino, 1999:163 (Italy: Piemonte: Borgomale); Pauly, 1999:109 (in catalog of Belgian aculeates); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:249 (in Sphecidae Fauna of Germany); Canovai et al., 2000:78 (Italy: Toscana: Isola di Montecristo); Gayubo, Gonzáles, and Torres, 2000:186 (Spain: Salamanca Province); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001a:107 (Great Britain: Watsonian Yorkshire); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Ivanov and Ljubomirov, 2001:212 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 176 (review of known biology); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Archer, 2002b:112 (Great Britain: Watsonian Yorkshire: distribution map); Kazenas, 2002a:84 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Litt, 2002:166 (Belgium); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:33 (Belarus: no specific locality); Steffan-Dewenter, 2002:634 (Germany: Göttingen area); Wiśniowski, 2002:70 (Poland: Ojców National Park); Flügel, 2003:9 (Germany: Hessen: Knüllwald); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Haeseler, 2003:340 (Germany: Niedersachsen: Harriersand Island near Bremen); Kuhlmann and Quest, 2003:51 (Germany: Bayern: Bayerischer Wald National Park); Kula and Tyrner, 2003:204 (Northern Czech Republic: spruce stands in air-pollution region); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Pagliano, 2003b:132 (Italy: Island of Pantelleria); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Archer, 2004:47 (Great Britain: Worcestershire: Devils Spittleful Nature Reserve); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo, Nieves-Aldrey, Gonzáles, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Kazenas, 2004c:105 (Kazakhstan: western Tien Shan); Salzmänn-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region, as *clavicerum clavicerum*); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); Wiśniowski, 2004:45 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:93 (in key to Polish *Trypoxylon*); Archer, 2005:30 (Great Britain: Watsonian Yorkshire); Cruz-Sánchez, Gayubo, Gonzáles, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:127 (in key to selected Iranian Sphecidae); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005:453 (Bulgaria: Begovitsa in Pirin Mts., Starosel near Hissarya); Jakubzik and Cölln, 2005:63 (Germany: Rheinland-Pfalz: Bausenberg near Niederzissen); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Yildirim and Ljubomirov, 2005:1799 (Turkey: Artvin: Yusufeli); Archer, 2006a:20 (Great Britain: Lincolnshire: Rauceby Warren Nature Reserve); Ljubomirov, 2006:54 (Bulgaria: Rhodope Mountains: Gornoslav and Yurukovo villages, as



*clavicerum clavicerum*); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

*Trypoxylon tibiale* Zetterstedt, 1840:... Synonymized with *Trypoxylon clavicerum* by ... – Gussakovskij, 1936:660 (redescription); Šnoflak in Zavadil and Šnoflak, 1948:59 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Balthasar, 1972:228 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); Kolesnikov, 1977:319 (Russia: Bryansk Oblast').

*Trypoxylon batumicum* Antropov, 1985a:630, ♂. Holotype: ♂, Georgia: Batumi (ZMMU). Synonymized with *Trypoxylon clavicerum* by Antropov in Bitsch et al., 2001:377 (in Sphecid Fauna of Western Europe).

As *Trypoxylon kolazyi*: Bettag, 1989:... (Germany: Speyer area), corrected to *Trypoxylon clavicerum* by Schmid-Egger, Risch, and Niehuis, 1995:214.

### **ssp. pullum Antropov**

*Trypoxylon clavicerum pullum* Antropov, 1989c:64, ♀. Holotype: ♀, Algeria: El Kseur: Forêt d'Akfadou (G. Pagliano coll.).

### **ssp. suifuense Tsuneki**

*Trypoxylon clavicerum suifuense* Tsuneki, 1981d:70, ♀, ♂. Holotype: ♀, China: Szechuan (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

### **102. clypeatum Tsuneki**

*Trypoxylon clypeatum* Tsuneki, 1979c:32, ♀. Holotype: ♀, Indonesia: East Java: Idjen Plateau (RMNH). – Tsuneki, 1979c:4, 6 (in key).

### **103. cocorite Richards**

*Trypoxylon cocorite* Richards, 1934:312, ♀. Holotype: ♀, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:114 (the type emerged from the same nest as females of *moraballi*); R. Bohart and Menke, 1976:346 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

### **104. cognatum Cameron**

*Trypoxylon cognatum* Cameron, 1897c:26, ♀. Holotype or syntypes: India: Himalaya Mts.: no specific locality (OXUM). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:338 (member of *scutatum* species group); R. Bohart and Menke, 1976:346 (listed).

### **105. collinsi Tsuneki**

*Trypoxylon collinsi* Tsuneki, 1980a:80, ♀. Holotype: ♀, Sarawak: Mt. Malu (BMNH). – Tsuneki, 1980a:10 (in key).

### **106. coloratum F. Smith**

*Trypoxylon coloratum* F. Smith, 1858a:106, "♂" = ♀. Lectotype: ♀, Malaysia: Sarawak (BMNH), designated by Tsuneki, 1978b:8. – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cameron, 1889c:118 (listed); Bingham, 1897:226 (redescription); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:8 (redescription), 78 (in key), 1980a:8 (in key), 61 (Borneo), 1981d:64 (Borneo: Brunei), 1981f:58 (member of *coloratum* species group).

### **107. compluvium Tsuneki**

*Trypoxylon compluvium* Tsuneki, 1980b:87, ♀, ♂. Holotype: ♂, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:10 (in key), 1981f:48 (member of *apicatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

### **ssp. mindoronis Tsuneki**

*Trypoxylon compluvium mindoronis* Tsuneki, 1980b:90, ♀. Holotype: ♀, Philippines: Mindoro Island: East Mindoro: Ilong: Mt. Haloon (AEI). – Tsuneki, 1980b:10 (in key).

**ssp. panayanum Tsuneki**

*Trypoxylon compluvium panayanum* Tsuneki, 1980b:90, ♀. Holotype: ♀, Philip pines: Panay Island: no specific locality (USNM). – Tsuneki, 1980b:10 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**ssp. samarianum Tsuneki**

*Trypoxylon compluvium samarianum* Tsuneki, 1980b:91, ♀, ♂. Holotype: ♂, Philippines: Samar Island: no specific locality (USNM). – Tsuneki, 1980b:10 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**108. concinnum Tsuneki**

*Trypoxylon concinnum* Tsuneki, 1979a:102, ♀. Holotype: ♀, Malaya: Selanger: Bukit Kutu (BMNH). – Tsuneki, 1979a:12 (in key), 1980a:7 (in key), 48 (Borneo; description of ♂), 1981f:22 (single member of *concinnum* species group).

**109. confrater Kohl**

*Trypoxylon confrater* Kohl, 1894:292, ♀. Holotype or syntypes: ♀, Liberia: Samlia Falls (Inst. Roy. Sci. Nat. Belgique). – Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Bingham, 1902:218 (Malawi); Arnold, 1924:19 (original description translated into English), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:93 (in key), 118 (revision, Zaire); R. Bohart and Menke, 1976:346 (listed).

**110. connexum R. Turner**

*Trypoxylon connexum* R. Turner, 1908:522, ♀, ♂. Syntypes: Australia: Queensland: Mackay (BMNH). – Richards, 1934:338 (member of *scutatum* species group); R. Bohart and Menke, 1976:346 (listed).

**111. cornigerum Cameron**

*Trypoxylon cornigerum* Cameron, 1889a:47, ♀. Lectotype: ♀, Mexico: north Yucatán: Temax (BMNH), designated by Richards, 1934:284. – Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:283 (revision); Vesey Fitzgerald, 1936:113 (Trinidad); Bischoff and von Schulthess, 1937:170 (Bolivia: San José); R. Bohart and Menke, 1976:346 (listed); Callan, 1991a:8 (Trinidad); Amarante, 1993:19 (ne. Brazil), 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae, as *comigerum*); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

As *Trypoxylon* sp. No. 7637: Rau, 1933:158 (Panama: Barro Colorado, ...), corrected to *Trypoxylon cornigerum* by Rau, 1935b:188.

**112. crassifrons Tsuneki**

*Trypoxylon crassifrons* Tsuneki, 1963c:14, ♀. Holotype: ♀, Thailand: Bangkok (Sasayama). – Iwata, 1964b:373 (nesting behavior in Thailand); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1981d:31 (relationship to *Trypoxylon maculipes*).

**113. crassipes Tsuneki**

*Trypoxylon crassipes* Tsuneki, 1981a:54, ♀. Holotype: ♀, New Guinea: Sarwaged Mts. (AEI). – Tsuneki, 1981a:7 (in key).

**114. crassipunctatum Arnold**

*Trypoxylon crassipunctatum* Arnold, 1946:74, ♀. Holotype: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:95 (in key), 122 (citation); R. Bohart and Menke, 1976:346 (listed).

**115. crassiventre Tsuneki**

*Trypoxylon crassiventre* Tsuneki, 1979a:70, ♂, ♀. Holotype: Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:9 (in key), 1981f:34 (single member of *crassiventre* species group).

#### 116. *cricetum* Leclercq

*Trypoxylon cricetum* Leclercq, 1965a:122, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:96 (in key); R. Bohart and Menke, 1976:346 (listed).

#### 117. *crudele* Richards

*Trypoxylon crudele* Richards, 1934:291, ♀. Holotype: ♀, Panama: Tobogilla Island (USNM). – R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

#### 118. *cucurbitinum* Tsuneki

*Trypoxylon cucurbitinum* Tsuneki, 1978a:20, ♀. Holotype: ♀, India: Deesa (BMNH). – Tsuneki, 1978a:7 (in key), 1979a:19 (citation), 1981d:21 (India: Hyderabad; additional description).

#### 119. *culionum* Tsuneki

*Trypoxylon culionum* Tsuneki, 1980b:23, ♀. Holotype: ♀, Philippines: Culion Island: 6 km W Culion (BISH). – Tsuneki, 1980b:5 (in key; as *curionum*).

#### 120. *curvicorne* Tsuneki

*Trypoxylon curvicorne* Tsuneki, 1979a:48, ♂, ♀. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:6 (in key), 1981d:38 (in key), 1981f:16 (single member of *curvicorne* species group).

#### 121. *curvum* Tsuneki

*Trypoxylon curvum* Tsuneki, 1980b:126, ♂. Holotype: ♂, Philippines: Mindanao: Kolumbugan (USNM). – Tsuneki, 1980b:11 (in key), 1981f:48 (member of *apicatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

#### 122. *daicocum* Tsuneki

*Trypoxylon daicocum* Tsuneki, 1979a:148, ♂, ♀. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:13, 15 (in key), 1981f:65 (member of *vardyi* species group).

#### 123. *darium* Leclercq

*Trypoxylon darium* Leclercq, 1965a:108, ♀. Holotype: ♀, Zaire: Garamba National Park: Aka (MRAC). – Leclercq, 1965a:86 (in key); R. Bohart and Menke, 1976:346 (listed).

#### 124. *darjeeling* Tsuneki

*Trypoxylon brevicarinatum* Tsuneki, 1979a:65, ♀, primary homonym of *Trypoxylon brevicarinatum* Cameron, 1912. Holotype: ♀, India: Darjeeling (BMNH). – Tsuneki, 1979a:8 (in key), 1981d:62 (in key).

*Trypoxylon darjeeling* Tsuneki, 1980a:2. Substitute name for *Trypoxylon brevicarinatum* Tsuneki. – Tsuneki, 1981d:45 (ne. Burma: Kambaiti).

#### 125. *deceptorium* Antropov

*Trypoxylon deceptorium* Antropov, 1991b:673, ♀, ♂. Holotype: ♂, Kazakhstan: Iliysk - Bakanas (ZMMU). Paratypes: Armenia, Austria, Azerbaijan, Belorussia, Cyprus, Egypt, Georgia, Germany, Greece, Hungary, Iran, Israel, Italy, Kazakhstan, Kyrgyzstan, Lebanon, Lithuania, Mongolia, Poland, Romania, Russia (European), Spain, Switzerland, Syria, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan, Yugoslavia. – Gusenleitner, 1991:646 (Austria: Burgenland: Hölle near Illmitz); Luig, 1993:45 (Estonia); Mochi and Luchetti, 1994:15 (Italy: Lazio, Veneto, Sardegna; Cyprus, Lebanon, Syria, Turkey); Pagliano, 1994:16 (Italy: Toscana, Corsica); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve, as *decertorium*); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Schmid-Egger, Risch, and Niehuis, 1995:214 (summary of records from Germany: Rheinland-Pfalz Province); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Minoranskiy and Shkuratov,

1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Ljubomirov, 1999b:51 (Bulgaria: Mt. Vitosha near Sofia); Luig and Voolma, 1999:179 (Estonia); Blösch, 2000:251 (in Sphecidae Fauna of Germany); Antropov *in* Bitsch et al., 2001:369 (in Sphecidae Fauna of Western Europe); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 175 (nesting habits); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Kazenas, 2002a:84 (geographic distribution, collecting localities in Kazakhstan); Wiśniowski, 2002:70 (Poland: Ojców National Park); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Iğdır: Melekli; Kars: Sarıkamış); Gusenleitner, 2003:864 (Austria: Steiermark: Stein SW Loipersdorf near Fürstenfeld at 47°00' 16°05'E); Kazenas, 2004c:105 (Kazakhstan: western Tien Shan); Stolle et al., 2004:373 (Germany: Sachsen-Anhalt: in red list of Sphecidae); Wiśniowski, 2004:45 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to Polish *Trypoxylon*); Yıldırım and Ljubomirov, 2005:1799 (Turkey: Bilecik and Erzurum provinces); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E); Tomarchio and Turrisi, 2006:957 (Italy: first record from Sicilia: Catania and Mount Etna).

### 126. *dendrophilum* Arnold

*Trypoxylon dendrophilum* Arnold, 1959:321, ♂. Holotype: ♂, Tanzania: Kawanga in Rukwa Valley (BMNH). – Leclercq, 1965a:87 and 88 (in key), 110 (revision; Burundi, Zaire); R. Bohart and Menke, 1976:346 (listed); Antropov, 1993b:54 (Central African Republic).

### 127. *dentatum* Tsuneki

*Trypoxylon dentatum* Tsuneki, 1981d:22, ♀. Holotype: ♀, India: Tamil Nadu: Shembaganur (BMNH).

### 128. *deuterium* Leclercq

*Trypoxylon deuterium* Leclercq, 1965a:109, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:87 (in key); R. Bohart and Menke, 1976:346 (listed).

### 129. *djampangense* Tsuneki

*Trypoxylon djampangense* Tsuneki, 1979c:48, ♀. Holotype: ♀, Indonesia: West Java: Middle Djampang (RMNH). – Tsuneki, 1979c:8 (in key).

### 130. *djun* Tsuneki

*Trypoxylon djun* Tsuneki, 1980a:87, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:11 (in key).

### 131. *duckei* Richards

*Trypoxylon duckei* Richards, 1934:327, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém (NHMW). – R. Bohart and Menke, 1976:346 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 132. *dyeri* Richards

*Trypoxylon dyeri* Richards, 1934:295, ♂. Holotype: ♂, Honduras: La Ceiba (USNM). – R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 133. *ebneri* Maidl

*Trypoxylon ebneri* Maidl, 1924:234, ♀. Holotype: ♀, Sudan: Dilling (NHMW). – R. Bohart and Menke, 1976:346 (listed); Dollfuss, 1989:13 (type material in NHMW).

### 134. *eburneipes* Tsuneki

*Trypoxylon eburneipes* Tsuneki, 1977h:11, ♀. Holotype: ♀, Papua New Guinea: New Ireland: Dana: Kalili Bay (ZMK). – Tsuneki, 1981a:7 (in key), 49 (New Guinea; additional description), 1982a:46 (Bismarck Archipelago).

**135. *ecuadorium* Richards**

*Trypoxylon ecuadorium* Richards, 1934:322, ♀, ♂. Holotype: ♀, Ecuador: Loja Province (BMNH). – Richards, 1934:343 (nesting in wood); R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

***ssp. meridionale* Richards**

*Trypoxylon ecuadorium* var. *meridionale* Richards, 1934:322, ♀. Holotype: ♀, Colombia: Vista Nieve in San Lorenzo Mts (USNM). – As *Trypoxylon ecuadorium meridionale*: R. Bohart and Menke, 1976:346 (new status, listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**136. *egregium* Arnold**

*Trypoxylon egregium* Arnold, 1959:322, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:81 (in key), 100 (revision, Zaire); R. Bohart and Menke, 1976:346 (listed).

**137. *elegantulum* F. Smith**

*Trypoxylon elegantulum* F. Smith, 1860a:84, ♀. Lectotype: ♀, Indonesia: Sulawesi: Makasar: no specific locality (OXUM), designated by Tsuneki, 1978b:12. – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:12 (redescription), 80 (in key), 1980a:8 (in key), 63 (diagnostic characters).

**138. *elgonense* Arnold**

*Trypoxylon elgonensis* Arnold, 1956:70, ♀, incorrect original termination. Syntypes: Kenya: Mt. Elgon (SAM). – As *Trypoxylon elgonense*: Leclercq, 1965a:90 (in key), 115 (citation); R. Bohart and Menke, 1976:346 (listed).

**139. *elongatum* F. Smith**

*Trypoxylon elongatum* F. Smith, 1856:378, ♂. Holotype or syntypes: Sierra Leone (BMNH). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); F. Williams, 1919:143 (nesting habits); Arnold, 1924:19 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:340 (member of *brevipenne* species group); Richards, 1934:343 (life history summary); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:346 (listed).

**140. *emeritum* Leclercq**

*Trypoxylon emeritum* Leclercq, 1965a:122, ♂. Holotype: ♂, Burundi: Usumbura (MRAC). – Leclercq, 1965a:95 (in key); R. Bohart and Menke, 1976:346 (listed).

**141. *errans* de Saussure**

*Trypoxylon errans* de Saussure, 1867:84, ♀. Holotype or syntypes: ♀, Mauritius Island or Brazil: no specific locality, actually Mauritius (NHMW or MHNG). – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); de Saussure, 1892:527 (Mauritius Island, redescription); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Friese, 1900:267 (Madagascar: Nosy-Be); R. Turner, 1911b:372 (Seychelles Islands); Bordage, 1912:58 (Isle of Réunion, life history); von y Friederichs, 1918a:48 (Madagascar: Diego Suarez); Richards, 1934:338 (member of *scutatatum* species group), 344 (life history summary); Arnold, 1945:7 (in key); Vesey-Fitzgerald, 1956b:362 (Seychelles); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:79 and 81 (in key), 1979a:13, 15, 17 (in key), 114 (Mauritius Island, Rodrigues Island, Seychelles, Sri Lanka, India, Nepal, Burma, Thailand, Cambodia, Malaya), 1979b:5 (in key), 20 (Sri Lanka), 1979c:5, 9 (in key), 28 (Indonesia: Java, Sumatra, Sumba), 1980a:11 (in key), 87 (Sulawesi), 1980b:11, 12 (in key), 115 (Philippines), 1981a:6 (in key), 45 (Guam, Hawaii; additional description), 1981c:8, 9 (in key), 42 (Taiwan; additional description), 1981d:17 (Sri Lanka), 29 (India, Singapore, Thailand), 49 (Burma), 78 (Hong Kong), 85 (Tanzania: Zanzibar; additional description), 20, 62 (in key), 1981e:4, 6-8 (in key), 59 (Japan; additional description), 1981f:56 (member of *errans* species group); Madl, Matyot, and Schödl,

- 1996:833 (Seychelles Islands); Wu and Zhou, 1996:103 (revision in Economic Insect Fauna of China); Yamane, Ikudome, and Terayama, 1999:526 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden).
- Trypoxylon intrudens* F. Smith, 1870:188, ♀. Lectotype: ♀, India: North-West Provinces, now Uttar Pradesh: Mainpuri (BMNH), designated with *Trypoxylon errans* by Tsuneki, 1978b:28. Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:28. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (listed) and 123 (diagnostic characters); Bingham, 1896a:441 (references), 1897:224 (redescription); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Green, 1903:68 (nesting in all available holes); Paiva, 1907:15 (India: Uttar Pradesh: Mussoorie); Bingham, 1908:355 (India: Purneah); Ramakrishna Aiyar, 1916:554 (reference to Green, 1903); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:28 (redescription); Pu, 1986:8 (China); S. Gupta, 1995:86 (India: Uttar Pradesh).
- Trypoxylon canaliculatum* Cameron, 1889c:122, sex non indicated. Lectotype: ♀, India: Barrackpore or Tirhoot or Mussoorie Hills (OXUM), designated by Tsuneki, 1978b:38. Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:38. – Cameron, 1889c:118 (listed); Bingham, 1897:225 (redescription); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:345 (listed); S. Gupta, 1995:86 (India: Uttar Pradesh).
- Trypoxylon geniculatum* Cameron, 1902f:313, ♀. Lectotype: ♀, India: Assam: Khasia Hills (BMNH), designated by Tsuneki, 1978b:46. Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:46. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *figulus* species group); Begum, Bose, and Howlander, 1989:126 (life history in Bangladesh); Begum, Khan, and Bose, 1995:176 (Bangladesh: Dhaka University Campus).
- Trypoxylon philippinense* Ashmead, 1904c:283, ♂ (as *Philippinense*, incorrect original capitalization). Holotype: ♂, Philippines: Luzon: Manila (USNM). Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:72. – R. Brown, 1906:687 (in catalog of Philippine Hymenoptera, as *philippinensis*); F. Williams, 1927 (nesting in hollow twigs), 1931:236 (nesting in hollow twigs); Richards, 1934:343 (life history summary); Krombein, 1949b:381 (in key to Sphecidae of Micronesia), 400 (Marshall Islands); Yoshimoto, 1960:333 (Hawaiian Islands); Baltazar, 1966:335 (in catalog of Hymenoptera of Philippines).
- Trypoxylon gardineri* Cameron, 1907e:76, ♀. Syntypes: ♀, Seychelles Islands: Coetivy (BMNH). Synonymized with *Trypoxylon errans* by R. Turner, 1911b:372. – Tsuneki, 1978b:60 (study of syntypes).
- Trypoxylon ornatipes* Cameron, 1913:24, "♂" = ♀, primary homonym of *Trypoxylon ornatipes* Cameron, 1889, and of *Trypoxylon ornatipes* W. Fox, 1891. Holotype: ♀, India: Uttar Pradesh: Dehra Dun (BMNH). Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:60. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *figulus* species group).
- Trypoxylon pulawskii* Tsuneki, 1956g:22, ♀, ♂. Holotype: ♀, Japan: Honshu: Utsunomiya (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Trypoxylon errans* by Tsuneki, 1981e:59. – Tsuneki, 1956g:4, 8 (in key); Prefecture); Nambu, 1966:25-34 (nesting habits); Tsuneki, 1966a:22 (Japan: Osaka); Nambu, 1967:6-16 (nesting habits); Tsuneki, 1969e:25 (Japan), 1970d:13 (nesting habits), 1973e:32 (in key), 1973d:150 (Japan: Saitama Prefecture), 1973e:36 (in key), 1975b:63 (Japan: Saitama Prefecture); Tano, 1994b:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).
- Trypoxylon tanoi* Tsuneki, 1967d:13, ♂, ♀. Holotype: ♂, Taiwan: Pingtung Prefecture: Fenglian (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:72. – Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:7 (Taiwan); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); Tsuneki, 1973f:44 (Taiwan), 1974b:630 (Thailand; discussion); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).
- Trypoxylon saitamaense* Tsuneki, 1973a:13, ♂. Holotype: ♂, Japan: Saitama Prefecture: Kohnosu (originally T. Nambu coll., now Hyogo Mus.). Synonymized with *Trypoxylon errans* by Tsuneki, 1981e:59. – Nambu,

1973d:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 38 (in key); Nambu, 1975b:63 (Japan: Saitama Prefecture); Tano, 1995:41 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

*Trypoxylon indicum* Menke in Bohart and Menke, 1976:346. Substitute name for *Trypoxylon ornatipes* Cameron, 1913.

#### 142. *erythrozonatum* Cameron

*Trypoxylon erythrozonatum* Cameron, 1901d:54, ♀. Holotype or syntypes: ♀, India: Maldives Archipelago: Male Atoll: Hulule (BMNH). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:346 (listed).

#### 143. *eugeniae* Gussakovskij

*Trypoxylon eugeniae* Gussakovskij, 1936:658, ♀. Syntypes: ♀, Tajikistan: Ravat-sai, headwaters of Dushanbinka River (ZIL). – Gussakovskij, 1935:421 (Tajikistan: Ravat-Say; nomen nudum); R. Bohart and Menke, 1976:346 (listed); Kazenas, 1978b:146 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

#### 144. *excellens* Strand

*Trypoxylon excellens* Strand, 1910a:172, ♀. Holotype: ♀, Paraguay: Asunción (ZMHU). – Richards, 1934:329 (revision); R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

#### 145. *exiguum* Tsuneki

As *Trypoxylon pygmaeum* (corrected to *Trypoxylon clavicerum exiguum* by Tsuneki, 1956g:37): Yasumatsu, 1938g:451 and 453 (Japan); Masuda, 1943:1 (life history).

*Trypoxylon clavicerum exiguum* Tsuneki, 1956g:37, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Yashirodani (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:6, 12 (in key); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1967g:44 (w. Japan: Mount Hyonosan); Haneda, 1968a:44 (Japan); Haneda, 1968b:55 (Japan: Nagano Prefecture: Ina District); Minamikawa, 1968:45 (nesting in walls of wooden temple at Higashi Murayama City, Tokyo Province); Tano, 1968:32 (Japan); Tsuneki, 1968l:50 (South Korea: Quelquepart Island); Haneda, 1969:68 (Japan: Yamanashi Prefecture); T. Iida, 1969a:276 (description of mature larva); Tsuneki, 1969e:25 (Japan), 1969i:59 (Japan: Fukui Prefecture: Taichôdzi temple; as *exguum*); Haneda, 1970:12 (Japan: Akita Prefecture); Tano, 1971:81 (Japan: Shikoku: Mt. Tsurugi); Yamada, 1971:35 (Japan: Aichi Prefecture; as *exguum*); Nambu, 1973d:150 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture; as *clavicerum exiguum*); Tsuneki, 1973e:34, 38 (in key), 1973v:150 (prey; as *clavicerus exiguum*); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1981e:5, 6 (in key), 40 (Japan; redescription); Tano, 1994a:6 (holotype in K. Tsuneki collection); Miyatake, 1996:102 (specimens in Hiroshi Aoki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon exiguum exiguum***: Antropov, 1986b:627 (new status); Antropov in Nemkov, Kazenas, Budryš, et Antropov, 1995:420, 422 (in key to Sphecidae of Russian Far East); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden).

#### **ssp. *gussakovskiji* Tsuneki**

*Trypoxylon pygmaeum* Gussakovskij, 1933:13, ♀, junior primary homonym of *Trypoxylon pygmaeum* Cameron, 1900. Lectotype: ♀, Russia: Primorskiy Krai: Sedanka (Stockholm), designated by Tsuneki, 1981e:43. – Gussakovskij, 1936:663 (revision); nec Yasumatsu, 1938:453 and Masuda, 1943:1 (= *Trypoxylon clavicerum exiguum*). – **As *Trypoxylon clavicerum pygmaeum***: Tsuneki, 1956g:6, 12 (in key), 36 (new status); R. Bohart and Menke, 1976:346 (listed).

*Trypoxylon clavicerum gussakovskiji* Tsuneki, 1974a:365. Substitute name for *Trypoxylon clavicerum pygmaeum* Gussakovskij, 1933. – R. Bohart and Menke, 1976:346 (listed); Kazenas, 1980e:91 (Russia: Primorskiy Kray); Tsuneki, 1981e:5, 6 (in key), 42 (redescription; South Korea: Quelquepart Islands), Tsuneki, 1982b:16 (known from Korea). – As *Trypoxylon exiguum gussakovskiji*: Antropov, 1986b:627 (new combination); Antropov in Nemkov, Kazenas, Budrys, et Antropov, 1995:420, 422 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve).

*Trypoxylon clavicerum gussakovskiji* Tsuneki, 1991:200, as new subspecies. Nomen nudum.

#### 146. *eximium* F. Smith

*Trypoxylon eximium* F. Smith, 1859a:161, ♀. Lectotype: ♀, Indonesia: Maluku: Aru Island (OXUM), designated by Tsuneki, 1978b:9. – F. Smith, 1860a:84 (Makasar and Key Islands); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:9 (redescription), 80 (in key), 1980a:9, 13 (in key), 104 (Sarawak), 1981a:9 (in key), 67 (New Guinea, Bismarck Archipelago; additional description), 1981b:100, 105 (Australia: North Queensland), 1981f:77 (member of *eximium* species group), 1982a:45 (Bismarck Archipelago); Cardale, 1985:264 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

As *Trypoxylon dorsale*: Tsuneki, 1977h:5 (new status; redescription), corrected to *Trypoxylon eximium* by Tsuneki, 1980a:2.

#### *ssp. gracillimum* F. Smith

*Trypoxylon gracillimum* F. Smith, 1863a:35, ♂. Lectotype: ♂, Indonesia: Misool Island: no specific locality (OXUM), designated by Tsuneki, 1978b:26. – F. Smith, 1865:86 (Indonesia: Moluku: Morotai Island); Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); R. Turner, 1912a:200 (New Guinea: Mimika River); R. Turner in R. Turner, Meade-Waldo, and Morley, 1915:8 (New Guinea: Mimika River; redescription); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:26 (redescription; ♀ = *Trypoxylon bituberculatum mysolense*), 79 (in key), 1980a:2 (synonymized with *Trypoxylon eximium*). – As *Trypoxylon eximium gracillimum*: Tsuneki, 1981a:8, 9 (in key), 70 (new status; additional description; description of ♂).

#### *ssp. obicola* Tsuneki

*Trypoxylon eximium obicola* Tsuneki, 1980a:105, ♀. Holotype: ♀, Indonesia: Obi Island: Kali Telaga (RMNH). – Tsuneki, 1980a:14 (in key).

#### 147. *eyeni* Leclercq

*Trypoxylon eyeni* Leclercq, 1965a:109, ♀. Holotype: ♀, Zaire: Bas-Congo: Kimwenza (MRAC). – R. Bohart and Menke, 1976:346 (listed).

#### 148. *fabricator* F. Smith

*Trypoxylon fabricator* F. Smith, 1873b:101, ♀, ♂. Lectotype: ♀, Brazil: no specific locality, but Amazon: Ega, now Tefé; and Catagallo, listed in original description (BMNH), designated by Richards, 1934:310. – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); W. Fox, 1897b:384 (Brazil: Mato Grosso: Chapada do Guimaraes); Bristowe, 1925a:480 (nest and prey); F. Williams, 1928:153 (nest); Richards, 1934:309 (revision); 345 (life history summary); Vesey Fitzgerald, 1936:114 (Trinidad: nest structure); R. Bohart and Menke, 1976:346 (listed); Callan, 1991a:8 (Trinidad); Sakagami, Gobbi, and Zucchi, 1990:846 (life history, quasisocial species); Gobbi, Sakagami, and Zucchi, 1991:37 (behavior on nests); Gomes, Pompolo, and Campos, 1995:174 (chromosome number n = 16); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).



*Trypoxylon gracile* Taschenberg, 1875:377, ♀. Syntypes: ♀, Venezuela: no specific locality (Halle). Synonymized with *Trypoxylon fabricator* by Richards, 1934:309. – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera).

*Trypoxylon brevicarinatum* Cameron, 1912a:439, ♀. Holotype or syntypes: ♀, Guyana: Demerara: no specific locality (BMNH). Synonymized with *Trypoxylon fabricator* by Richards, 1934:309.

As *Trypoxylon rugifrons* Rau, 1933:151 (Panama: Barro Colorado, nest, mimicked by a fly, *Baccha* sp.), corrected to *Trypoxylon fabricator* by Rau, 1935b:188.

#### 149. *fastigium* W. Fox

*Trypoxylon carinifrons* W. Fox, 1891c:142, ♀, ♂, junior primary homonym of *Trypoxylon carinifrons* Cameron, 1889. Lectotype: ♀, USA: Texas: no specific locality (ANSP), designated by Cresson, 1928:52.

*Trypoxylon fastigium* W. Fox, 1894a:476. Substitute name for *Trypoxylon carinifrons* W. Fox, 1891. – Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Richards, 1934:315 (not examined); Brimley, 1938:443 (North Carolina: Durham); Sandhouse, 1940:165 (revision); Brimley, 1942:36 (North Carolina: previous records actually refer to *Trypoxylon backii*); Krombein in Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:346 (listed); Krombein, 1979b:1643 (in catalog of North American Hymenoptera).

*Trypoxylon subfrigidum* Rohwer, 1909g:378, ♂. Holotype: ♂, USA: Texas: Lee County: Fedor (USNM). Synonymized with *Trypoxylon fastigium* by Sandhouse, 1940:166. – Richards, 1934:314 (not examined).

*Trypoxylon nigrellum* Rohwer, 1909g:379, ♀. Holotype: ♀, USA: Texas: Lee County: no specific locality (USNM). Synonymized with *Trypoxylon subfrigidum* by Richards, 1936b:463 and with *Trypoxylon fastigium* by Sandhouse, 1940:166. – Richards, 1934:320 (revision).

#### 150. *fenchihuense* Tsuneki

*Trypoxylon fenchihuense* Tsuneki, 1967d:16, ♂. Holotype: ♂, Taiwan: Chiayi Prefecture: Fenchihu (originally K. Tsuneki coll., now USNM). – Tsuneki, 1971g:8 (Taiwan); Haneda, 1972a:5 (Taiwan); Tsuneki, 1972c:2 (Taiwan); R. Bohart and Menke, 1976:346 (listed); nec Tsuneki, 1977j:272 (= *Trypoxylon sauteri*), 1981c:4, 6 (in key), 24 (Taiwan; additional description), 1981f:37 (member of *pacificum* species group); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

#### 151. *ferox* F. Smith

*Trypoxylon ferox* F. Smith, 1860a:84, ♀. Lectotype: ♀, Indonesia: Sulawesi: Makasar: no specific locality (OXUM), designated by Tsuneki, 1978b:13. – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:13 (redescription; also ♂ which = *wallacei*), 79 and 81 (in key), 1980a:7 (in key), 2 (♂ described in 1978b = *wallacei*), 56 (citation).

#### 152. *ferrugatum* Tsuneki

*Trypoxylon ferrugatum* Tsuneki, 1979a:45, ♀. Holotype: Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:6 (in key).

#### 153. *ferrugineum* Tsuneki

*Trypoxylon ferrugineum* Tsuneki, 1979a:50, ♀, ♂. Holotype: ♀, Thailand: Chiang Mai: Doi Suthep (BISH). – Tsuneki, 1979a:6 (in key), 1981d:34 (Burma), 38, 61 (in key).

#### 154. *fiebrigi* Richards

*Trypoxylon fiebrigi* Richards, 1934:339, ♀. Holotype: ♀, Paraguay: San Bernardino (MNHU). – R. Bohart and Menke, 1976:346 (listed); Amarante, 1993:19 (ne. Brazil), 2002:48 (in catalog of Neotropical Crabronidae).

#### 155. *figulus* (Linnaeus)

*Sphex figulus* Linnaeus, 1758:570. Holotype: ♀, Sweden: Uppsala (Linnean Society, London). – Rossi, 1790:61 (in revision of insects of Etruria, now Toscana, Italy); Roth von Schreckenstein, 1802:30 (Germany: Baden-Württemberg); Illiger, 1807b:93 (synonymy, redescription); Day, 1979:62 (discussion of holotype); Day and Fitton, 1978:193 (recuration of Linnean type material). – **As *Apius figulus***: Jurine, 1807:142 (new combination, listed) and pl. 9, Fig. 8 (illustration of habitus); Freigessner, Kohl, and Kriechbaumer, 1882:393 (Jurine's specimens are *Trypoxylon figulus*). – **As *Trypoxylon figulus***: Latreille, 1802:79 (new combination), [1805]:310 (redescription); Spinola, 1806:65 (Italy: Liguria); Lepeletier and Serville, 1828:750 (listed); Vander Linden, 1829:42 (bibliographic references, Belgium: Bruxelles, all Europe); Guérin-Méneville, 1835:pl. 71, Fig. 3 (illustration of habitus); Shuckard, 1837a:115 (in revision of British Aculeata), 252 (prey: a spider); Zetterstedt, 1838:445 (in revision of insects of Lapland); von Siebold, 1839:49 (Germany: Danzig, now Poland: Gdańsk); Dufour and Perris, 1840 (28 (nesting in stems of *Rubus*, larva); Herrich-Schaeffer, 1840:295 (Germany: Bayern: Regensburg area); Dufour, 1841a:497 and 1841b:236 (digestive tract), 1841a:503 and 1841b:239 (male reproductive system), 1841a:507 and 1841b:243 (female reproductive system); Dahlbom, 1844:280 (in revision of Sphecidae and Pompilidae); Guérin-Méneville, 1844:441 (bibliographic references); Dahlbom, 1845, 1845:509 (in key); Lepeletier de Saint Fargeau, 1845:228 (revision); Gistel, 1848:142 (Germany, description); F. Smith, 1848:57 (preying on aphids [sic]); Eversmann, 1849:414 (Russia: Ural foothills and Kazan province); Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony); Wissmann, 1849:15 (Germany: Kingdom of Hannover: nesting in wood and clay cliffs); Tischbein, 1850:9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); Wesmael, 1852:269 (Belgium: Bruxelles); Belke, 1853:433 (Ukraine: Kamieniec Podolski); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg and Wiesbaden); Kirchner, 1854:313 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); F. Smith, 1856:376 (listed); Kawall, 1857:25 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:132 (in revision of fossorial wasps of Nassau Region, Germany); A. Costa, 1858:20 (Italy: Campania: Monti Partenii in Benevento Region); Taschenberg, 1858:99 (Germany); Assmus, 1859:616 (Russia: Moscow Oblast'); Schenck, 1860:147 (Germany: Nassau region); Brischke, 1862:105 (Germany: Preussen Province, now Poland: Pomorze Region); Brown, 1863:181 (Great Britain: Burton-on-Trent); Brischke, 1864:209 (Germany: Preussen Province, now Poland: Pomorze Region); Giraud, 1866:474 (nests in plant stems including *Rubus*, preys on small spiders); Jaenicke, 1867:147 (Germany: Hessen: Frankfurt area); Palma, 1867:41 (Italy: Sicilia settentrionale); Schenck, 1867a:353 (Germany: Nassau Region); Dietrich, 1868:362 (Switzerland: Zurich Canton); Wierzejski, 1868:117 (common everywhere); Aichinger, 1870:315 (Austria: Tirol); Thomson, 1870:250 (in revision of Swedish wasps); A. Costa, 1871b:46 (in revision of Italian Sphecidae); Ivanov, 1872:152 (Ukraine: Kharkov area); Schlechtendal, 1872:36 (Germany: Sachsen: Zwickau); Dours, 1874:151 (in catalog of Hymenoptera of France); Mocsáry, 1874:120 (Siebenbürgen: Hermannstadt, now Romania: Transylvania: Sibiu); Wierzejski, 1874:261 (common); Marquet, 1875:209 (France: Languedoc); Taschenberg, 1875:379 (Germany: Halle; USA: Illinois); Beuthin, 1876:230 (Germany: Hamburg area); Radoszkowski, 1877:68 (Uzbekistan: Zaravshan valley; Kyrgyzstan: Gulcha); Girard, 1879:929 (morphology and habits); Becker, 1880:153 (Russia: Sarepta, now Krasnoarmeysk S Volgograd); Kohl, 1880:135 (Austria: Tirol, and Italy: Trentino–Alto Adige); Siebke, 1880:67 (Norway); Magretti, 1881:122 (Italy: Lombardia), 271 (listed); Marquet, 1881:184 (southern France); Schøyen, 1881:12 (correction to Siebke, 1880); A. Costa, 1883a:58 (Italy: Sardegna); Kohl, 1883e:657 (Switzerland); Sickmann, 1883:76 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (England: Essex: Colchester area); von Heyden, 1884:121 (Germany: Frankfurt am Main area); Kohl, 1885a:193 (in key to European *Trypoxylon*), 194 (in revision

of European species), 204 (in checklist of world *Trypoxylon*); De Stefani Perez, 1886:172 (Italy: Sicilia: monte di Renda near Palermo); Wüstnei, 1886:37 (Germany: Schleswig-Holstein); Ed. André, 1888:210 (in revision of Sphecidae of Europe and Algeria), 18\* (bibliographic references); Brischke, 1888a:54 (Germany: Hela Peninsula, now Poland: Hel Peninsula), 1888b:100 (Germany: Preussen Province, now Poland: Pomorze Region); Cuní y Martorell, 1888:164 (Spain: Barcelona); C. Verhoeff, 1891b:18, 37 (life history); Radoszkowski, 1892:591 (male genitalia); Kohl, 1893a:29 (Austria: Niederösterreich); Brischke, 1894:53 (Germany: Brösen W Danzig, now Poland: W Gdańsk); C. Verhoeff, 1892b:362 (male cocoons are closer to nest entrance), 365 (individuals of both sexes that emerge first are larger), 1892c:709, 725 (nesting habits); Alfken, 1893:120 (Germany: Frisian Islands: Juist Island); F. Morawitz, 1893a:113 (Russia: Karelian Isthmus), 1993b:409 (Tajikistan: Iskander-kul in Zeravshan River valley); Sickmann, 1893:81 (Germany: Niedersachsen: Iburg); West-erlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Baldini, 1894:54 (Italy: Modena area); Brischke, 1894:54 (Germany: Brösen W Danzig, now Poland: Gdańsk-Brzeźno); De Stefani Perez, 1894:216 (Italy: Sicilia); Krieger, 1894:9 (Germany: Kingdom of Saxony); Medina, 1894a:260 (Spain: Sevilla and Pozuelo de Clatrava); De Stefani Perez, 1895:227 (in catalog of Sicilian Hymenoptera); Meunier, 1896:271 (Belgium: Bruxelles area); Acloque, 1897:92 (in Sphecidae Fauna of France and Algeria); Borries, 1897:70 (review of known nesting habits); Cuní y Martorell, 1897:332 (Spain: Cataluña: villa de Calella); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (common in all parts of Hungarian kingdom); Flamary, 1898:38 (France: Saône-et-Loire: Mâcon area); O. Schneider, 1898:102 (Germany: Borkum Island); Strand, 1898bb:95 (Norway); J. Nielsen, 1901a:268 (nesting habits); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus); Chyzer, 1902:34 (Hungary); Friese, 1902:478 (occurring in Swedish Lapland according to Zetterstedt, 1838); Nevinson, 1902:12 (Great Britain: Cornwall: Newquay); Piggeot, 1902:63 (nesting habits); Antiga and Bofill, 1904:13 (Spain: Cataluña Province); Aurivillius, 1904:277 (in revision of Swedish Sphecidae); Höppner, 1904:164, 168 (nest parasite: *Eurytoma rubicola* Gir.); Martineau, 1904:46 (England: Budleigh Salterton); E. Saunders, 1904c:635 (Spain); W. Schulz, 1904b:102 (Czechoslovakia); Zilahi Kiss, 1904:77 (Hungary: Tasnád, Peér); Kubes, 1905:84 (Czech Republic: Kolín, Obora, Sušice, Veltruby); Vängel, 1905:166 Hungary); Adlerz, 1906:25 (Sweden; life history); Dusmet y Alonso, 1906:7 (Spain); Graeffe, 1906:455 (Tunisia: Tunis area); Mercet, 1906c:466 (in key to Palearctic species); Strand, 1906:101 (Norway: Aal); Móczár and Henter, 1907:205 (Hungary: Pécs); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Höppner, 1908:177 (mixed nest of *Chevrieria unicolor* = *Pemphredon unicolor* and of *Trypoxylon figulus*), 369 (mixed nest of *Osmia leucomelaena* K. and *Trypoxylon figulus*); Malyshev, 1908:9 (homing); Sparre Schneider, 1909:110 (Zetterstedt's record from Norway); Cavro, 1910:685 (France: Département du Nord); Höppner, 1910b:93 (mixed nest of *Trypoxylon figulus* and of *Prosopis brevicornis* Nylander), 95 (mixed nest of *Trypoxylon figulus*, *Odynerus exilis* Herrich-Schaeffer, and of *Chevrieria unicolor* = *Pemphredon unicolor*), 133 (mixed nest of *Trypoxylon figulus* and *Crabro vagus* = *Ectemnius continuus*), 161 (mixed nest of *Trypoxylon figulus* and of *Odynerus laevipes* Shuckard); Kleine, 1910:24 (nesting in barkbeetles galleries); Dittrich, 1911b:26 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); M. Müller, 1911:113 (occasional nesting in *Lipara* galls); Popovici-Bazosanu, 1911:XCIII (nesting habits); Birula, 1912:546 (Ukraine: Radomysl near Kiev); Schirmer, 1912:168 (Germany: Berlin area); Kohl, 1913b:15 (Russia: Voronezh Oblast': Valuyki at 50°14'N 38°08'E); Szilády, 1913:88 (Hungary: Miriszló, Nagyenyed, Topánfalva, Verespatak); Alfken, 1914:284 (NW Germany); Dusmet y Alonso, 1915:87 (Spain: Aragón); Haverhorst, 1916:448 (nesting habits); Kerenskiy, 1919:37 (Russia: Penza Government);

O. Meyer, 1919:157 (Germany: Posen Province, now Poland: Poznań Region); Strand, 1920:14 (Germany: Mecklenburg-Vorpommern: Rostock); A. Wagner, 1920:37 (Germany: Lower Elbe region); Dubois, 1921c:217 (in key to Belgian Sphecidae); Fahringer and Friese, 1921:161 (Turkey: Erzurum: Iyarbashi in Amanus Mts. = Gavur Dağları); Strand, 1921:33 (Germany: Bayern: Kulmbach); Fahringer, 1922:184 (Turkey); Gennerich, 1922:40 (morphology); Jansson, 1922:24 (Sweden: Öland Island); Maidl, 1922:73 (Albania, Croatia); Alfken, 1924:231 (N Germany); Lundblad, 1924:22 (Sweden: Lappland: Lycksele); R. Perkins, 1924a:229 (Great Britain: Devon); Berland, 1925d:150 (in Sphecid Fauna of France); Bischoff, 1925:302 (Latvia: Jelowka, Tauerkall, and Wezkukkul; Poland: Białowieża and Grajewo areas); Coulon, 1925:126 (France); Strohm, 1925:212 (Germany: Baden-Württemberg: Achkarren in Kaiserstuhl); Hémon, 1926:199 (France: Finistère: Fouesnant); Kokujev, 1927:72 (Russia: Siberia: Lake Baikal); F. Werner, 1927:67 (Austria: Niederösterreich: River Kamp valley); Chevalier, 1929a:11 (nesting habits); Grandi, 1929:288 (Italy: Toscana: valle della Limentra); Maneval, 1929b:292 (nesting habits); Micheli, 1929:40 (nesting habits, France); Hamm and Richards, 1930:118 (summary of nesting habits); A. Müller, 1930:181 (Romania: Brăila); Richards, 1930:134 (Great Britain: nesting in rotten posts at Bagley Wood near Oxford); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1931:9 (Spain); Butterfield and Fordham, 1931:155 (Great Britain: Yorkshire); Dusmet y Alonso, 1931:6 (Portugal: Mitra); Grandi, 1931:57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Spooner, 1931:15 (Great Britain: Cambridgeshire); Bondroit, 1932:39 (Belgium: common in Bruxelles area); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Jones, 1932b:233 (Great Britain: Wicken Fen); Haverhorst, 1933:474 (nest structure); Merisuo, 1933a:60 (Finland: city of Turku); E. Nielsen, 1933:273 (summary of nesting habits, description of nest); Balles, 1934:29 (Germany: Baden-Württemberg: Achern, Fautenbach, Sasbachwalden); Giner Mari, 1934:135 (Spain); Giordani Soika, 1934:342 (description of mature larva); Jansson, 1934:291 (Sweden); Forsius *in* Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Grandi, 1935a:111 (Italy); Minkiewicz, 1935:209 (Poland: Kazimierz on Wisła), 216, 221 (Poland: Lake Garbaś 20 km W Suwałki); Spooner, 1935:139 (Great Britain: Northamptonshire); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drenowski, 1936:247 (Bulgaria: Sofia); Drogoszewski, 1936:130 (Poland: Łowicz, Opatów); Gussakovskij, 1936:655 (redescription); Khramushin, 1936:3 (nesting behavior); Maréchal, 1936:374 (review of literature on nesting habits); Roller, 1936:316 (Austria: loess cliffs at Bisamberg near Vienna); Dulac, 1937:17 (France: Saône-et-Loire: Bois des Gauthérons, Saint-Laurent d'Andenay); Zavadil, Šusterka, and Bat'a, 1937:221 (in catalog of Sphecidae of Czechoslovakia); P. Freeman, 1938:5 (nest and prey); A. Wagner, 1938a:124 (northwestern Germany); Aerts, 1939:135 (Germany: Nordrhein-Westfalen: loess cliff at Weilerswist near Köln); Dovnar-Zapolskiy, 1940:304 (Russia: Kursk Oblast'); Balthasar, 1941b:114 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Guiglia, 1941c:160 (Italy: Calabria: Grande Sila); Leclercq, 1941a:68 (Belgium: Pays de Liège), 1941b:12 (Belgium: Liège area); Schneid, 1941:1052 (Germany: Bayern: Bamberg area); Alfken, 1942:231 (Germany: Niedersachsen: Lüneburger Heide); Audcent, 1942:25 (parasite: *Miltogramma punctatum* Meigen, *Amobia signata* Meigen); J. Perkins, 1942:199 (Sweden: Skåne: Höör); Spooner, 1942:110 (Great Britain: Bedfordshire); Giner Mari, 1943a:217 (in Sphecid Fauna of Spain); Giordani Soika, 1944:13 (Italy: Sicilia: Taormina); Guiglia, 1944b:32 (Italy); Richards, 1944b:133 (nesting in perpendicular gravel face, list of prey); de Beaumont, 1945:476 (Switzerland; diagnostic characters and closely related species); Deleurance, 1946b:67 (France: Bouche-du-Rhône: Camargue: Bois des Rièges); Spooner, 1946:26 (Britain: Leicestershire: Charnwood Forest); Carl and de Beaumont, 1947:68 (Switzerland: Graubünden = Grisons Canton: Swiss National Park);

Balthasar, 1948:144 (Slovakia: Kovačov); Bristowe, 1948:23 (nesting behavior); Guichard and Yarrow, 1948:89 (Great Britain: London: Hampstead Heath); Šnoflak *in* Zavadil and Šnoflak, 1948:58 (in key to Sphecidae of Czechoslovakia); Chambers, 1949:223 (Great Britain: Bedfordshire); Currie, 1950:80 (spider prey: immature *Araneus* sp.); de Beaumont, 1950f:409 (Algeria); Georgel, 1950:64 (France: Seine-et-Oise: Sucy-en-Brie); Szulczewski, 1950:102 (Poland: Wielkopolski Park Narodowy 15 km S Poznań); Blüthgen, 1951:232 (the three varieties recognized by de Beaumont are distinct species); Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera, as *figulum*); Caruel, 1952a:62 (France: Marne Department); Hallett, 1952:44 (Great Britain: W Sussex: Bosham Hoe); Cleu, 1953:51 (France: Ardèche River basin); Głowacki, 1953:521 (Poland: Podkowa Leśna near Warszawa); Nouvel and Ribaut, 1953:181 (France: Hautes-Pyrénées: Cauterets, Orédon); de Beaumont, 1954e:92 (Italy); Fahlander, 1954:253 (Sweden: Gästrikland Region); Macko and Noskiewicz, 1954:180 (Poland: Dolny Śląsk: Stolec at 50°35'N 16°53'E); Aerts, 1955:66 (Germany: Rheinland); Lehrer, 1955:265 (Romania: Moldova: Iași, Broșteni and Dealul Rusca in Iași District); Steiner, 1955:139 (France: Dordogne); Teschner, 1955:57 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Vogrin, 1955:40 (Yugoslavia); Bytinski-Salz, 1956:226 (Turkey); Bajári, 1957a:66 (in key to Hungarian Sphecidae); Benno, 1957:144 (Netherlands: Tilburg area, nesting in stems of *Rubus*); Evans, 1957b:97 (discussion of larval characters); Yeo, 1957:19 (Great Britain: Middlesex, now in London); Zirngiebl, 1957:185 (Germany: Rheinland-Pfalz: Pfalz region); Benno, 1958b:17 (in review of Dutch Sphecidae); de Beaumont, 1958c:206 (Swiss National Park); Lundblad, 1958:48 (Sweden: Gotland); Nouvel and Ribaut, 1958:16 (France: Pyrénées-Orientales: Banyuls-sur-Mer); Compte Sart, 1959:137 (Spain: Majorca); de Beaumont, 1959a:29 (Italy); Diniz, 1959:31 (Portugal: Mitra); Noskiewicz and Puławski, 1960:107 (in key to Polish Sphecidae); de Beaumont, 1962b:27 (Spain); Valkeila, 1961a:144 (var. *major*, *media*, and *minor* are individual forms of one species), 1962b:66 (southwestern Finland); Scobiola, 1963:825 (Romania: Chilia in Danube delta); de Beaumont, 1964a:290 (status of var. *major*, *media*, and *minor*), 1964c:84 (in Sphecid Fauna of Switzerland); Babiş, 1964:115 (Austria: Land Salzburg); Ceballos, 1964:94 (in supplement to catalog of Spanish Sphecidae); Valkeila, Brander, and Käpylä, 1964:75 (Finland: Southern Finland: Jokioinen); de Beaumont, 1965a:56 (Greece; var. *major*); Fæster, 1965:192 (Denmark: Hansted Nature Reserve); Roberti, Frilli, and Pizzaghi, 1965:110 (Italy: Emilia-Romagna: Pianello in Piacenza Province); Benedek, 1966a:162 164 (nesting occasionally in galls of *Cynips kollari* Hartig); Scobiola-Palade, 1966b:392 (Romania: Tulcea District: Tulcea); Benno, 1967:38 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:338 (Turkey); J. Heinrich, 1967:76 (Germany: Bayern: Unterfranken District); Lefeber, 1967c:219 (Netherlands: Bemelen, St. Pietersberg); Niedl and Deneš, 1967:79 (Czech Republic: Třeboň area); Scobiola-Palade, 1967a:162 (Romania: Constanța District: Comarova, Hagieni), 1967b:44 (Romania); Benedek, 1968:73 (Hungary, floral records); Bonelli, 1968a:31 (nesting habits), 1968b:50 (Italy: Trentino–Alto Adige: Cavalese); Leclercq, 1968b:39 (Great Britain: Kent), 1968d:109 (Belgium: city of Liège); Scobiola-Palade, 1968b:142 (Romania: Island of Letea in delta of Danube), 1968c:385 (Romania: fourteen localities); Benedek, 1969a:84 (Hungary; marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Dathe, 1969:440 (Germany: Berlin Zoological Garden); Wolf, 1968:12 (Germany: Nordrhein-Westfalen: Siegen, inhabitant of forest edge); Lefeber, 1969c:234 (Netherlands: St. Pietersberg = Montagne Saint Pierre); O'Toole, 1969:173 (larva, larval behavior); Romanova, 1969:134 (Russia: North Caucasus); Stelfox, 1969:238 (in key, not recorded from Ireland); Zangheri, 1969:1704 (Italy); Babiş, 1970:19 (Austria: recognition of the forms *major*, *media*, and *minor*); Benedek, 1970:99 (Hungary: Tapolca); Hoop, 1970:61 (Germany: Schleswig-Holstein: Wendtorfer sluice); Lefeber and Petit, 1970:130 (Belgium: Plombières);

Oehlke, 1970:725 (Democratic Germany); Danks, 1971a:347 (nesting habits), Dathe, 1971:234 (Germany: Berlin Zoological Garden; phenology); de Groot, 1971:168 (nest); Petit, 1971:22 (Luxemburg: Bourscheid, Brandenburg, Ernzen, Lellingen, Schuttbourg); Tsuneki, 1971:409 (Mongolia); Wolf, 1971:374 (Italy: Trentino–Alto Adige: Alpi Siusi); Balthasar, 1972:225 (in Sphecidae Fauna of Czechoslovakia); Haeseler, 1972:155, 165, 175, 195, 200, 204 (Germany: Schleswig-Holstein; anthropogenic habitats); Kofler, 1972:108 (Austria: eastern Tirol); Lomholdt, 1972:122 (Denmark: Læsø Island); Oehlke, 1972:138 (Germany: Hiddensee Island); Scobiola-Palade, 1972a:350 (Romania: delta of Danube: Caraorman), 1972b:253 (Romania); Erlandsson, 1974:76 (Italy, Yugoslavia); Kofler, 1974:320 (Austria: Kärnten); Scobiola-Palade, 1974:144 (Romania: Sărăturile sandbank in Danube delta); Frilli and Pizzaghi, 1975:53 (Italy: Gambaro in Piacenza Province); Jussila and Kämpylä, 1975:85 (nest parasite: *Townesia tenuiventris* (Holmgren), an ichneumonid); Lefeber, 1975b:120 (Netherlands: Schiepersberg); R. Bohart and Menke, 1976:346 (listed); Cretin and Robert, 1976:45 (France: Doubs: Chassagne-Saint Denis); Haeseler, 1976b:72 (Germany: Friesian Islands: Amrum Island); Jacob-Remacle, 1976:235 (Belgium: Liège, nest structure and mortality); Leclercq, Gaspar, Delecluse and Thirion, 1976:149 (Belgium: freeway median strip); Leclercq, Gaspar, Lajoinie, and Thirion, 1976:178 (Belgium); Lomholdt, 1976:266 (in Sphecidae Fauna of Fennoscandia and Denmark); Simon Thomas, 1976:5 (France: Lot-et-Garonne); Simon Thomas and Wiering, 1976:109 (Netherlands); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Guichard, 1978:271 (Greece); Haeseler, 1978b:63 (Germany: Niedersachsen: a bog near Oldenburg), 1978c:195 (Germany: Friesian Islands: Borkum Island); Kazenas, 1978b:146 (in key to Sphecidae of Kazakhstan and Central Asia); Marion, 1978:89 (France: Nièvre Department); Pulawski, 1978:253 (in key to Sphecidae of European part of former USSR); Schwammerberger, 1978:417 (Germany: Württemberg); Benedek, 1979:231 (Hungary: Bakony Hills); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 86 (Netherlands: distribution map); Leclercq, Gaspar and Verstraeten, 1979:map 1421 (Belgium); Marchal and Leclercq, 1979:10 (Belgium: Gembloux); Schmidt, 1979a:54 (Germany: Ost-Holstein); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection); Jacob-Remacle and Leclercq, 1980:193 (Belgium: gardens in Liège); Pagliano, 1980:129 (Italy: Piemonte); Richards, 1980:45 (in key to Sphecidae of British Isles); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Haeseler, 1981:52 (Germany: Friesian Island: Amrum Island); Józán, 1981:305 (Hungary: Hortobágy National Park); Skibińska, 1981:358 (Poland: Warszawa-Białoleka); Tsuneki, 1981e:3 (in key), 15 (discussion of *medium* and *minus*), 19 (redescription), 1981f:80 (member of *figulus* species group); Woydak, 1981:41 (Germany: Westfalen: Hamm); Abrahamsen, 1982:138-146 (yearly and daily flight periods); Axelsson, 1982:80 (Sweden); Donath, 1982:214 (Germany: Cottbus Bezirk); Finnermore, 1982:115 (in Sphecidae Fauna of Southern Quebec); Leclercq, 1982a:124 (Belgium: Liège); Schedl, 1982:101 (Austria: Tirol: Ötztaler Alps); Skibińska, 1982:123 (Poland: Warszawa area); Dollfuss, 1983b:12 (Austria); Jacob-Remacle and Jacob, 1983:242 (Belgium: Liège Province: fagne de Malchamps near Spa); Janzon, 1983:171 (Sweden: Öland); Józán, 1983:100 (Hungary); Lefeber, 1983a:85 (Netherlands: Waddendistrict: northern coast sand dunes, Terschelling Island); Riemann, 1983:86 (Germany: Bremen-Daverden area); Chevin and Silvestre de Sacy, 1984:7 (France: Yvelines Department); Gayubo, 1984b:90 (Spain: Salamanca Province), 1984c:373 (Portugal: El Algarve Province); Gayubo and Tormos, 1984:17 (Spain: Valencia); Haack, Tschamtker, and Vidal, 1984:133 (Germany: Hamburg area); Janzon and Svensson, 1984:183 (Sweden: Öland Island); Lefeber, 1984:29 (Netherlands: Maastricht); Pulawski, 1984:126 (revision); Schmidt, 1984:294 (Federal Germany: Baden-Württemberg); Gayubo, 1985a:487 (attempts at preying), 1985c:169 (Spain: five localities); Hae-

seler, 1985a:351 (Federal Germany: Schleswig-Holstein), 355 (prey), 1985c:571 (Federal Germany: Friesian Islands); Józán, 1985a:181 (Hungary), 1985b:57 (Hungary S Lake Balaton), 78 (floral records), 84 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:97 (Romania: delta of Danube); Brechtel, 1986:62 (Germany: Südpfalz); Gayubo, 1986b:38 (Spain: Andalucía), 1986c:35 (Spain: Zamora Province); Gayubo and Sanza, 1986:55 (Spain: Burgos, Segovia); Gayubo and Tormos, 1986a:18 (Spain: Castellón de la Plana); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Józán, 1986:371 (Hungary: Kiskunság National Park); Nemkov, 1986:99 (Russia: Siberia: Irkutsk Oblast'); Skibińska, 1986b:151, 154 (Poland: suburbs of Warszawa), 160 (gardens), 164 (streetside green), 168 (green areas of housing estates), 174 (various green urban habitats); Vikberg, 1986:76 (Finland); Haeseler, 1986b:668 (Federal Germany: Ipweger Moor near Oldenburg); Antropov, 1987:58 (Russia: Primorskiy Krai: 40 km SE Ussuriysk); Lomholdt, 1987:93 (Denmark: western Jutland: Skallingen Peninsula); Riemann, 1987a:340 (Germany: Niedersachsen: Bremen area); Schmidt and Westrich, 1987:366 (Federal Germany: Mainz area); Scobiola-Palade, 1987:64 (Romania: Dobrogea); Tormos and Jiménez, 1987a:125 (Spain: Valencia); Asís and Jiménez, 1988:273 (Spain: Castellón Province); Chevin, 1988:15 (France: La Manche Department); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Felton, 1988:221 (Britain: Kent County; population dynamics); Nilsson, 1988:98 (Sweden); Gayubo and Mingo, 1988:88 (Spain); Haeseler, 1988:211 (Federal Germany: Friesian Islands); Kowalczyk, 1988a:45 (Poland: Rogów), 1988b:65 (Poland: environs of Łódź); Riemann, 1988:223 (Germany: Bremen area); Wolf, 1988b:141 (Germany: Rheinland-Westfalen); Archer, 1989a:131 (Great Britain: York: found before coniferization); Jacobs, 1989:14 (Germany: Mecklenburg-Vorpommern); Józán, 1989:101 (Hungary: Tihany Nature Reserve); Pádr *in* Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:97 (Belorussia: Berezinskiy Nature Reserve); Scobiola-Palade, 1989:88 (Romania: delta of Danube); Skibińska, 1989a:204 (Poland: Warszawa area), 1989b:291 (Poland: moist meadow in Warszawa area); Weiffenbach, 1989:107 (Germany: Hessen: Gießen area); Archer, 1990c:15 (Great Britain: Leicestershire); Barbier, Rasmont, and Wahis, 1990:32 (Belgium: Hainaut); Gayubo, Asís, and Tormos, 1990a:20 (Spain); Jacobs and Oehlke, 1990:131 (in key), 172 (new records from Democratic Germany); Kowalczyk, 1990:291 (Poland: Góry Świętokrzyskie); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pádr, 1990:82 (Czech Republic: Praha area); Pagliano, 1990:109 (in catalog of Italian Sphecidae); Riemann and Melber, 1990:120 (*Calluna*-meadows); Rohe, 1990:1050 (Germany: Rheinland-Pfalz: Lenneberg forest); Schwammberger and Priesner, 1990:541 (Austria: Kärnten); von der Heide and Witt, 1990:64 (Germany: Niedersachsen); Dollfuss, 1991:122 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:404 (Italy); Jakubzik, 1991:75 (Germany: Köln); Józán, 1991:603 (Hungary: Bátorliget Nature Reserve); Kowalczyk, 1991a:90, 93, 97, 99, 101, 105, 107 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Kuhlmann et al., 1991:92 (Germany: Senne Region); Leclercq, 1991a:274 (proper synonymy and nomenclature as in Pulawski, 1984); Nilsson, 1991:83 (Sweden: Lake Mälaren); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve SE Koblenz); Archer, 1992a:56 (Great Britain: Leicestershire); Delarze, 1992:68 (Switzerland: Valais: Les Follatères); Gayubo, Borsato, and Osella, 1992:28 (Algeria, Greece, Turkey); Jakubzik and Cölln, 1992:121 (Germany: Rheinland-Pfalz; reared from artificial nests); Józán, 1992a:229 (Hungary: Béda-Karapanca Protected Area), 1992b:174 (Hungary: Boronka-melléki Protected Area), 1992c:289 (Hungary: Zselic Hills); N. Schneider, 1992:179 (Luxembourg); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:24 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Archer, 1993c:39 (Great Britain: York-

shire); Gorobchishin, 1993:47 (Ukraine: Kanev Nature Reserve); Józán, 1993:413 (Hungary: Bükk National Park); Kuhlmann, 1993:76 (Germany: known from Westfalen); Luig, 1993:44 (Estonia); Sorg and Wolf, 1993:61 (Germany: Rheinland-Westfalen: Nature Reserve Die Spey); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Blagoveshchenskaya, 1994:87 (Russia: Ul'yanovsk Oblast'); nec Blades and Marshall, 1994:276 (= *Trypoxylon attenuatum*); Gathman, Greiler, and Tscharncke, 1994:10 (Germany: colonization of set-aside fields); Gayubo and Borsato, 1994:210 (Italy: Veneto); Kowalczyk, 1994:74 (Poland: Łagiewniki forest in Łódź); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Tormos, Asís, and Gayubo, 1994:188, 211 (Spain: Albacete Province); Antropov in Nemkov, Kazenas, Budrys, et Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Archer, 1995a:23 (Great Britain: Yorkshire: frequency); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Kowalczyk and Krzeptowski, 1995:189 (Poland: Tatry Mts.); Negrisola in Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Papp and Józán, 1995:147 (Hungary: Síkfökút oak forest); Riemann, 1995:52 (Germany: Bremen); Shlyakhtenok, 1995:194 (Belarus: Berezinsky Nature Reserve); Schmid-Egger, Risch, and Niehuis, 1995:190 (color photograph), 214 (summary of records from Germany: Rheinland-Pfalz Province); Skibińska, 1995:423, 425, 427 (Poland: pine forest in Białowieża Primeval Forest); von der Dunk and Amon, 1995:52 (Germany: Nürnberg: Birkenlach forest); Archer, 1996b:37 (Great Britain: Nottinghamshire: Sherwood Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Harvey and Plant, 1996:69 (Great Britain: summary of records from Essex); Hol, 1996:83-86 (Holland; nesting in trap nests; parasitoid: the ptinid beetle *Ptinus sexpunctatus* Panzer); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996a:323 (Germany: nesting in stems of *Rubus*), 324 (parasite: *Perithous divinator* Rossi, an ichneumonid), 333 (in keys to cocoons), 1996b:401 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Shlyakhtenok, 1996:304 (Belarus: Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:44 (Germany: Westfalen: summary of distribution and life history); Archer, 1997a:48 (Great Britain: Yorkshire: Burton Leonard Lime Quarries); Petit, 1997:351 (Belgium: Liège Province: Lanaye: colonization of new habitat); Riemann, 1997:50 (Germany: Achim 14 km SE Bremen); Stoyanov and Ljubomirov, 1997:26 (Bulgaria: Rila Mountains); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Celary, 1998:211 (Poland: Babia Góra National Park); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); Gonzáles, Gayubo, and Torres, 1998:74, 75 (Spain: Valladolid Province); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Harriersand Island in Weser River); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Salzmann-Wandeler, 1998a:98 (Switzerland: Luzern Canton: Sempach); Sugar *et al.*, 1998:15 (Canada: southern Ontario); van der Smissen, 1998:70 (Germany: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Gonzáles, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Ljubomirov, 1999b:51 (Bulgaria: Mt. Vitosha near Sofia); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:179 (Estonia); Pagliano and Scaramozzino, 1999:163 (Italy:



Piemonte: Borgomale); Pauly, 1999:109 (in catalog of Belgian aculeates); Riemann, 1999:835 (Germany: Niedersachsen: sand pits near Bremen); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Sørensen, Mauss, and Schindler, 1999:504 (Germany: Schleswig-Holstein); Blösch, 2000:252 (in Sphecid Fauna of Germany); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Giachino, Grosso, Marchetti, Pagliano, Scaramozzino, and Vailati, 2000:107 (Greece); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Pagliano and Scaramozzino, 2000:28 (nest parasite: *Gasteruption opacum* (Tournier); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Wiśniowski, 2000:161 (Poland: Bieszczady Mts.); Antropov *in* Bitsch et al., 2001:373 (in Sphecid Fauna of Western Europe); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001b:14 (Great Britain: Watsonian Yorkshire); Basset, 2001:84 (France: Département de Gironde); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia), 176 (review of known biology); Ohl et al., 2001:142 (distribution in Germany by provinces); Salzmänn-Wandeler and Rezbanyai-Reser, 2001:157 (Switzerland: Tessin Canton: Meride area); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); Wolf, 2001a:172 (Germany: Bayern: Lech valley from Augsburg to Donau); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Archer, 2002b:112 (Great Britain: Watsonian Yorkshire: distribution map); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Kraus and Floren, 2002:100 (Germany: Bayern: Münnerstadt); Kruess and Tscharncke, 2002:1576 (Germany: Schleswig Holstein: number of specimens higher on ungrazed and extensively grazed grassland); Litt, 2002:166 (Belgium); Shkuratov, 2002b:141 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:33 (Belarus: no specific locality); Steffan-Dewenter, 2002:634 (Germany: Göttingen area); von der Dunk and Amos, 2002:159 (Germany: Bayern: Schwaig near Nürnberg); Wiśniowski, 2002:70 (Poland: Ojców National Park); Antropov, 2003:438 (in key to North American species of *figulus* group); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Bilecik and Erzurum Provinces); Flügel, 2003:9 (Germany: Hessen: Knüllwald); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Harriersand Island near Bremen); Kula and Tyrner, 2003:204 (Northern Czech Republic: spruce stands in air-pollution region); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Schmid-Egger, 2003:759 (Italy: Sicilia: Nebrodi); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); Tischendorf and Treiber, 2003:121 (Germany: Hessen: 15 km SW Frankfurt am Main: nesting under high power lines); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Georgiev et al., 2004:239 (nesting in old galleries of cerambycid *Saperda populnea* (L.) in Bulgaria); Jakubzik and Cölln, 2004:271 (in key to nests of Hymenoptera nesting in stems of *Rubus*); Kazenas, 2004c:105 (Kazakhstan: western Tien Shan); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National

Park near Warszawa); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to Polish *Trypoxylon*); Archer, 2005:30 (Great Britain: Watsonian Yorkshire); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Jacobs, 2005:453 (Bulgaria); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Yildirim and Ljubomirov, 2005:1799 (Turkey: Bayburt, Bingöl, Erzurum, and Konya provinces); Archer, 2006a:21 (Great Britain: Lincolnshire: Rauceby Warren Nature Reserve); Ljubomirov, 2006:544 (Bulgaria: Rhodope Mountains: previous records summarized, also: Yurukovo Village, as *figulus figulus*); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

*Sphex fuliginosa* Scopoli, 1763:292, ..., incorrect original termination. Holotype or syntypes: Carniolia (formerly in Austria, since 1919 part of Italy and Yugoslavia), lost (Rogenhofer and Dalla Torre, 1882:599). Neotype: ♀, Austria: Kärnten: Ebriach (CAS), designated by Pulawski, 1984:126. – **As probable synonym of *Trypoxylon figulus***: Vander Linden, 1829:42. – **As synonym of *Trypoxylon figulus***: subsequent authors.

As *Trypoxylon albitarse*: Belke, 1866:512 (Ukraine: Zhitomir Oblast': Radomyshl'), corrected to ? *Trypoxylon figulus* by Birula, 1912:532.

*Trypoxylon figulus* var. *majus* Kohl, 1883:657, ♀, ♂ (as *major*, incorrect original termination). Holotype or syntypes: Switzerland, no specific locality (originally NHMW, now lost). Neotype: ♀, Switzerland, Peney near Genève (MHNG), designated by Pulawski, 1984:126. – de Beaumont, 1945:477 (Switzerland; diagnostic characters; as *figulus* v. *major*); de Andrade, 1949:20 (Portugal; as *figulus major* de Beaumont); Blüthgen, 1951:234 (is a valid species, probably a synonym of *figulus*); de Beaumont, 1951h:33 (Switzerland: Neuchâtel area; as *figulus* f. *major*); Leininger, 1953:17 (Germany: Baden-Württemberg, as *figulus* var. *major*); Grandi, 1954:238 (Italy; as *figulus* f. *major*), 1957:388 (Italy; as *figulus* f. *major*); de Beaumont, 1958c:206 (Swiss National Park; as *figulus major*), 1959a:30 (Italy: Alto Adige: Bolzano; as *figulus* f. *major*); Diniz, 1959:31 (Portugal: Lisboa); Wolf, 1959a:15, 16 (Germany; key; as *figulus majus*), 1959b:25 (Germany: Nassau); Hoop, 1961:66 (Germany: Schleswig-Holstein; as *figulus majus*); de Beaumont, 1964c:84 (in Sphecid Fauna of Switzerland, as *figulus* f. *major*), 1967a:338 (Turkey; as *figulus* f. *major*); Gauss, 1967:554 (Germany: Baden-Württemberg, as. f. *major*); Schmidt, 1971b:38 (Germany: Mainz area; as *figulus* f. *major*), 1971c:74 (Germany: Schleswig-Holstein; as *figulus major*); Stritt, 1971a:104 (Baden-Württemberg: Germany: Karlsruhe; as *figulus major*); Kofler, 1972:108 (Austria: eastern Tirol; as *figulus* f. *major*), 1974:320 (Austria: Kärnten; as *figulus* f. *major*); R. Bohart and Menke, 1976:346 (as *figulus major*), 628 (is a synonym of *Trypoxylon figulus*); Schmidt, 1977:96 (Germany: Schwarzwald; as *figulus major*); Amarante 2005:11 (correction to his 2002 catalog).

*Trypoxylon apicale* W. Fox, 1891c:142, ♀ (as *apicalis*, incorrect original termination). Lectotype: ♀, Canada: no specific locality (ANSP), designated by Cresson, 1928:52. Synonymized with *Trypoxylon figulus* by Pate, 1943c:16. – W. Fox, 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:700 (in catalog of world Hymenoptera). – **As *Trypoxylon apicale***: Rohwer, 1909g:379 ("occurs in Canada and at Beverly, Mass."); Richards, 1934:317 (revision); Sandhouse, 1940:156 (revision).

*Trypoxylon figulus yezo* Tsuneki, 1956g:29, ♀, ♂. Holotype: ♀, Japan: Hokkaido (= Yezo): Jozankei (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Trypoxylon figulus* by Pulawski, 1984:127. – Tsuneki, 1956g:5, 9 (in key); Haneda, 1968a:44 (Japan), 1968b:55 (Japan: Nagano Prefecture: Ina District); Nambu, 1973d:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 37 (in key); Nambu, 1975b:64 (Japan: Saitama Prefecture); Tsuneki, 1979d:9 (Japan), 1981e:4 (in key), 21 (Japan; redescription); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

*Trypoxylon figulus barbarum* de Beaumont, 1957a:148, ♀, ♂. Holotype: ♂, Morocco: Marrakech (Lausanne). Synonymized with *Trypoxylon figulus* by Pulawski, 1984:127.

*Trypoxylon fieuzeti* Giner Mari, 1959:389, ♂. Holotype: ♂, Morocco: Fez (IEE, Madrid). Synonymized with *Trypoxylon figulus barbarum* by Suárez in Giner Mari, 1959:400.

**ssp. breviatriculatum Antropov**

*Trypoxylon figulus breviatriculatum* Antropov, 1989c:65, ♂. Holotype: ♂, Algeria: El Kseur: Forêt d'Akfadou (G. Pagliano coll.).

**156. fitzgeraldi Richards**

*Trypoxylon fitzgeraldi* Richards, 1934:282, ♀, ♂. Holotype: ♂, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:112 (Trinidad: nest); R. Bohart and Menke, 1976:346 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**157. flagellatum Tsuneki**

*Trypoxylon flagellatum* Tsuneki, 1980a:41, ♀. Holotype: ♀, North Borneo: Sandakan (USNM). – Tsuneki, 1980a:6 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**158. flavimanum Arnold**

*Trypoxylon flavimanum* Arnold, 1946:71, ♀. Syntypes: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:88 (in key), 110 (citation); R. Bohart and Menke, 1976:346 (listed); Hancock, Chahwanda, and Mhlanga, 1995:40 (paratype in Bulawayo Museum).

**159. flavipes Tsuneki**

*Trypoxylon flavipes* Tsuneki, 1979a:24, ♀. Holotype: ♀, Laos: Vientiane Province: Gi Sion Vill.: de Tha Ngone (BISH). – Tsuneki, 1979a:3 (in key), 1979b:3 (in key), 8 (Sri Lanka), 1980a:4 (in key), 17 (Borneo; ♂), 1981a:4 (in key), 13 (New Guinea), 1981b:100 (in key), 103 (Australia: Queensland: Mt. Tamborine), 1981d:18 (in key), 1981f:43 (member of *flavipes* species group); Cardale, 1985:264 (in catalog of Australian Sphecidae).

**ssp. breve Tsuneki**

*Trypoxylon flavipes breve* Tsuneki, 1980b:23, ♀. Holotype: ♀, Philippines: Samar Island: no specific locality (USNM). – Tsuneki, 1980b:5 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**160. flavofasciatum Tsuneki**

*Trypoxylon flavofasciatum* Tsuneki, 1980a:28, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:5 (in key).

**161. fletcheri R. Turner**

*Trypoxylon fletcheri* R. Turner, 1918b:363, ♀. Holotype: ♀, India: Assam: Shillong (BMNH). – Richards, 1934:315 (member of *figulus* species group); Tsuneki, 1978b:67 (redescription), 77 (in key), 1979a:4 (in key), 31 (Malaya; comments), 1979c:5 (in key), 21 (Indonesia: Java), 1981d:35 (Burma: Kambaiti), 61 (in key), 1981f:19 (member of *nodosicorne* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon taihorinsho* Tsuneki, 1977j:274, ♀. Holotype: ♀, Taiwan: Taihorinsho (TMB). Synonymized with *Trypoxylon fletcheri* by Tsuneki, 1981f:99. – Tsuneki, 1981c:3, 6 (in key), 15 (Taiwan; additional description).

**ssp. baguionis Tsuneki**

*Trypoxylon fletcheri baguionis* Tsuneki, 1980b:43, ♀, ♂. Holotype: ♀, Philippines: Luzon: Baguio Benguet (USNM). – Tsuneki, 1980b:6 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**162. florale Richards**

*Trypoxylon florale* Richards, 1934:294, ♀. Holotype: ♀, Brazil: Blumenau (NHMW). – R. Bohart and Menke, 1976:346 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 163. *formosicola* Strand

*Trypoxylon formosicola* Strand, 1922b:148, ♀, ♂. Lectotype: ♀, Taiwan: Taihorin (DEI), designated by Oehlke and Wudowenz, 1974:422. – Richards, 1934:315 (member of *figulus* species group); Yasumatsu, 1938a:73 (Botel Tobago, now Lang Hsu Island SE Taiwan); nec Yasumatsu, 1938f:447 (= *Trypoxylon formosicola inornatum*); Tsuneki, 1966b:2, 3 (in key), 6 (Taiwan; redescription), 1967d:4 (Taiwan), 1968d:54 (Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:2 (Taiwan); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1977j:272 (Taiwan), 1981c:7, 9, 11 (in key), 32 (Taiwan; additional description), 1981f:60 (single member of *formosicola* species group), 1982d:10 (Taiwan); Yamane, Ikudome, and Terayama, 1999:527 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan).

*Trypoxylon formosicola aberratio calcaralis* Strand, 1922b:150, ♂, incorrect original termination. Lectotype: ♂, Taiwan: Kankau, now Hengchun (DEI), designated by Oehlke and Wudowenz, 1974:422. Synonymized with *Trypoxylon formosicola* by Tsuneki, 1981c:34. – As *Trypoxylon formosicola calcarale*: R. Bohart and Menke, 1976:346 (new status, listed); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan).

### ssp. *amamiense* Tsuneki

*Trypoxylon amamiense* Tsuneki, 1964b:2, ♀, ♂. Holotype: ♂, Ryukyu Islands: Amami-Oshima: Akaodi (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1966b:7 (synonymized with *Trypoxylon formosicola inornatum*); Tano, 1994b:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – As *Trypoxylon formosicola amamiense*: Tsuneki, 1981c:11 (in key), 35 (resurrected from synonymy, new status; additional description), 1981e:7, 8 (in key), 81 (citation), 1982g:61 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago).

### ssp. *inornatum* Matsumura and Uchida

*Trypoxylon inornatum* Matsumura and Uchida, 1926:42, ♀. Syntypes: ♀, Japan: Okinawa: Okinawa-honto (Hokkaido Univ., Sapporo). – Yasumatsu, 1938f:447 (as new synonym of *Trypoxylon formosicola*); Tsuneki, 1966b:2, 3 (in key), 7 (redescription, synonymy), 1968d:54 (Ryukyus). – As *Trypoxylon formosicola inornatum*: Tsuneki, 1967d:5 (new status), 1973e:33, 36 (in key); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1981c:7, 9, 11 (in key), 34 (Okinawa; additional description), 1981d:81 (Hongkong), 1981e:7 (in key), 81 (citations), 1982g:61 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago).

As *Trypoxylon formosicola*: Yasumatsu, 1938:447 (Taiwan), corrected to *Trypoxylon inornatum* by Tsuneki, 1966b:7.

### 164. *fortius* Tsuneki

*Trypoxylon bakerianum fortius* Tsuneki, 1979c:33, ♂, ♀. Holotype: ♂, Indonesia: West Java: Malang (RMNH). – Tsuneki, 1979c:6 (in key). – As *Trypoxylon mindanaonis fortius*: Tsuneki, 1980a: 2 and 72 (new combination; key), 1980b:106 (Philippines: Luzon; additional description). – As *Trypoxylon fortius*: Tsuneki, 1981f:99 (new status), 1981f:54 (member of *mindanaonis* species group).

### ssp. *mulu* Tsuneki

*Trypoxylon mindanaonis mulu* Tsuneki, 1980a:72, ♀, ♂. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:10 (in key). – As *Trypoxylon fortius mulu*: Tsuneki, 1981f:99 (new combination), 54 (member of *mindanaonis* species group).

### 165. *foveatum* Cameron

*Trypoxylon foveatum* Cameron, 1904:139, ♀. Holotype or syntypes: ♀, South Africa: Eastern Cape Province: Dunbrody (Albany Museum Grahamstown? Transvaal Museum Pretoria?). – Arnold, 1924:26 (original description

copied, type probably lost), 1930:10 (in checklist of Afrotropical Sphecidae). – Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:346 (listed).

### 166. *freidbergi* Antropov

*Trypoxylon freidbergi* Antropov, 1989c:63, ♀. Holotype: ♀, Israel: Herzliya (Tel Aviv University).

### 167. *frigidum* F. Smith

*Trypoxylon frigidum* F. Smith, 1856:381, ♀. Holotype or syntypes: ♀, Canada: Hudson Bay (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:415 (revision); Cresson, 1873:226 (Texas); Glover, 1878:... (nest); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1891c:143 (in revision of North American *Trypoxylon*), 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:705 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: no specific locality); Harrington, 1902:222 (Canada: Ontario: Ottawa); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Rohwer, 1909g:377 (Colorado); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rohwer, 1916b:677 (in catalog of Hymenoptera of Connecticut), 1917a:246 (California: Oakland or Piedmont); Rau, 1922:22 (USA: Missouri: St. Louis, dead male found in stem of sumac); Blackman and Stage, 1924:196 (New York: Syracuse, nesting in dead wood of hickory); Taylor, 1928:... (nests in wood); Hendrickson, 1930:159 (Iowa); Richards, 1934:318 (revision), 343 (life history summary); Krombein, 1936:98 (New York: Buffalo; floral records); Richards, 1936b:463 (correction to geographic distribution); Pate, 1937:5 (...); Strickland, 1947:128 (Canada: Alberta); Brimley, 1938:443 (North Carolina: Raleigh); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); Krombein, 1952b:177 (USA: West Virginia: Lost River State Park), 1954a:5 (West Virginia: Lost River State Park); Evans, 1957b:96 (larva); Koerber and Medler, 1958:55 (Wisconsin, nesting in trap-nests); Krombein, 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:273 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); F. Parker and R. Bohart, 1966:95 (Nevada: Verdi); Krombein, 1967b:223 (nesting habits observed in artificial nests); Evans, 1970:489 (Wyoming: Jackson Hole); Bohart and Menke, 1976:346 (listed); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Tsuneki, 1981f:80 (member of *figulus* species group); Finnamore, 1982:116 (in Sphecid Fauna of Southern Quebec); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Finnamore, 1997:889 (Canada: Yukon); Sugar *et al.*, 1998:15 (Canada: southern Ontario); Yamane, Ikudome, and Terayama, 1999:529 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Antropov, 2003:438 (in key to North American species of *figulus* group); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada); Giles and Ascher, 2006:231 (New York: Black Rock Forest Preserve). – **As *Trypoxylon figulus frigidum***: Blades and Marshall, 1994:276 (Canada: southern Ontario).

*Trypoxylon plesium* Rohwer, 1920b:229, ♀. Holotype: ♀, USA: Missouri: St. Louis (USNM). Synonymized with *Trypoxylon frigidum* by Sandhouse, 1940:157. – Rau, 1926:197 (female walking on spider's web), 1928:439 (nest in twig); Richards, 1934:319 (revision), 343 (life history summary).

*Trypoxylon aldrichi* Sandhouse, 1940:158, ♀, ♂. Holotype: ♀, USA: Washington: Fishtrap Lake (USNM). Synonymized with *Trypoxylon frigidum* by Coville, 1986b:2. – Strickland, 1947:128 (Canada: Alberta: Waterton); Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); F. Parker and R. Bohart, 1966:95 (California: Placer County: Carnelian Bay on Lake Tahoe); Evans, 1970:489 (Wyoming: Jackson Hole); Evans, 1973c:153 (nesting behavior); R. Bohart and Menke, 1976:345 (listed); Krombein, 1979b:1642 (in catalog of North American Hymenoptera); Zack, 1984:38 (paratype in James Entomological Collection, Washington State University); Finnamore, 1997:888 (Canada: Yukon); Coville, 1990:2 (*aldrichi* is a geographic form of *frigidum*); Finnamore, 1994:210 (Canada: Alberta: Wagner Natural Area 8 km W Edmonton).

As *Trypoxylon clavatum*: Faull, 1913:385 (Canada: Toronto region), corrected to *Trypoxylon frigidum* by Buck, 2004:77.

**ssp. cornutum Gussakovskij**

*Trypoxylon cornutum* Gussakovskij, 1932:11, ♀, ♂. Syntypes: Russia: Siberia: Kamchatka: Elisovo and Primorskiy Kray: Sedanka (Stockholm), also Khabarovsk (ZIL). – Gussakovskij, 1936:656 (revision). – **As *Trypoxylon frigidum cornutum***: Tsuneki, 1956g:5, 10 (in key), 24 (redescription); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Prefecture; Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Haneda, 1968a:44 (Japan), 1968b:55 (Japan: Nagano Prefecture: Ina District); Tano, 1968:32 (Japan); Tsuneki, 1969e:25 (Japan), 1970b:10 (central Japan); Nambu, 1973d:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:33, 36 (in key), 1973v:150 (prey), 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:346 (listed); Kazenas, 1980e:90 (Russia: Far East); Tsuneki, 1981e:4 (in key), 1982b:16 (known from Korea); Nemkov, 1992b:245 (Russia: Far East: Khingan Nature Reserve); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve).

*Trypoxylon frigidum chongar* Tsuneki, 1956g:25, ♂. Holotype: ♂, N Korea: Nansetsu-rei (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon frigidum cornutum* by Tsuneki, 1981e:22. – Tsuneki, 1956g:10 (in key); R. Bohart and Menke, 1976:346 (listed); Nuhn and Menke, 1994:25 (holotype transferred to USNM).

*Trypoxylon frigidum yamatonis* Tsuneki, 1981e:23, ♀, ♂. Lectotype: ♂, Japan: Japanese Alps (originally K. Tsuneki coll., now Hyogo Mus.), designated by Hashimoto and Nakanishi, 1997:20 (as holotype, Article 74a). Synonymized with *Trypoxylon frigidum cornutum* by Antropov, 1987:60. – Tsuneki, 1981e:4 (in key); Antropov, 1986a:90 (Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection).

**168. frioense Richards**

*Trypoxylon frioense* Richards, 1934:287, ♀, ♂. Holotype: ♂, Colombia: Magdalena: Río Frio (depository not indicated). – Richards, 1934:346 (nest structure, parasite: *Brachymeria* sp.); R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**169. frontale F. Smith**

*Trypoxylon frontale* F. Smith, 1856:378, ♀. Holotype or syntypes: ♀, Africa: no specific locality (BMNH). – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:705 (in catalog of world Hymenoptera); Arnold, 1924:20 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:346 (listed).

**170. fronticorne Gussakovskij**

*Trypoxylon fronticorne* Gussakovskij, 1936:659, ♀, ♂. Syntypes: many localities between Germany and Primorskiy Kray of Russia (ZIL). – de Beaumont, 1945:478 (Switzerland); Šnoflak *in* Zavadil and Šnoflak, 1948:58 (in key to Sphecidae of Czechoslovakia); Blüthgen, 1951:234 (Germany: Bavaria and Siethen near Berlin); Leininger, 1953:18 (Germany: Baden-Württemberg: Karlsruhe); Bajári, 1957a:67 (in key to Hungarian Sphecidae), 1957b:136 (first record from Hungary); Wolf, 1959b:25 (known from Germany but not from Nassau); Noskiewicz and Puławski, 1960:108 (in key to Polish Sphecidae, not yet found in Poland); Balthasar and Hrubant, 1961:13 (Czech Republic: Morava: Čejč; Slovakia: Belanské Kopce near Štúrovo); de Beaumont, 1964c:84 (in Sphecidae Fauna of Switzerland); Gauss, 1966a:66 and 1966b:308 (Germany: Baden-Württemberg: Wutach); Gauss, 1967:555 (Germany: Baden-Württemberg); Benedek, 1969a:84 (Hungary; marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Babiy, 1970:20 (Austria: Land Salzburg); Hoop, 1970:61 and 1971:84 (Germany: Schleswig-Holstein; misidentified *figulus* according to W.J. Puławski who studied vaucher specimens); Oehlke, 1970:725 (Democratic Germany: Potsdam area); Gauss, 1971b:418 (Germany: Baden-Württemberg: Wutach River area); Hoop, 1971:84 (Germany: Schleswig Holstein: Hochwachte Bucht); Stritt, 1971a:104 (Baden-Württemberg: Germany: Karlsruhe); Balthasar, 1972:226 (in Sphecidae Fauna of Czechoslovakia); Kazenas, 1972b:155 (Kazakhstan); R. Bohart and Menke, 1976:346 listed; Eck, 1976:91 (Democratic Germany); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Kazenas, 1978b:146, 147 (in key to Sphecidae of Kazakhstan and Central Asia); Puławski, 1978:252 (in key to Sphecidae of European part of former USSR);

Benedek, 1979:232 (Hungary: Bakony Hills); Tsuneki, 1979a:7 (in key), 56 (India, Nepal; redescription), 1981c:3, 5 (in key), 13 (citation), 1981e:4 (in key); Dollfuss, 1983b:12 (Austria: Salzburg: Parsch); Józán, 1985b:57 (recorded from Mecsek by Bajári, 1957), 84 (ecological and zoogeographic characteristics); Schmidt, 1984:294 (Federal Germany: Baden-Württemberg); Westrich and Schmidt, 1985b:112 (Federal Germany: endangered in Baden-Württemberg); Nemkov, 1986:99 (Russia: Siberia: Irkutsk Oblast'); Karsai, 1988:100 (Hungary: Kiskunság National Park); Jacobs, 1989:15 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Weiffenbach, 1989:108 (Germany: Hessen: Gießen area; as *franticorne*, identification tentative); Jacobs and Oehlke, 1990:172 (citation of Eck, 1976); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Day, 1991:xix (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:122 (in key to Sphecidae of North and Central Europe); Gusenleitner, 1991:646 (Austria: Oberösterreich: Kronau); Gorobchishin, 1993:47 (Ukraine: Kanev Nature Reserve), 1995:18 (Ukraine: Kanev Nature Reserve); Papp and Józán, 1995:147 (Hungary: Síkfőkút oak forest); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Gusenleitner, 1996a:8 (Austria: Burgenland); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Wu and Zhou, 1996:103 (revision in Economic Insect Fauna of China); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Schnee, 1997:99 (Germany: Sachsen); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:254 (in Sphecidae Fauna of Germany); Antropov *in* Bitsch et al., 2001:372 (in Sphecidae Fauna of Western Europe); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitosha near Sofia); Ohl et al., 2001:142 (distribution in Germany by provinces); Amiet and Moretti, 2002:177, 178 (Switzerland: Tessin); Gusenleitner, 2002:1125 (Austria: Oberösterreich: Linz); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Shlyakhtenok and Skibinska, 2002:33 (Belarus: no specific locality); Georgiev et al., 2004:239 (nesting in old galleries of cerambycid *Saperda populnea* (L.) in Bulgaria); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:90 (first record from Poland: Kampinoski Park Narodowy = Kampinos National Park near Warszawa), 93 (in key to Polish *Trypoxylon*); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

### ***ssp. assamense* Tsuneki**

*Trypoxylon fronticorne assamense* Tsuneki, 1979a:58, ♀, ♂. Holotype: ♂, India: Assam: Shillong (BMNH). – Tsuneki, 1979a:7 (in key).

### ***ssp. brevicorne* Tsuneki**

*Trypoxylon fronticorne brevicorne* Tsuneki, 1979a:58, ♂. Holotype: ♂, India: Simla (BMNH). – Tsuneki, 1979a:7 (in key).

### ***ssp. burmanicum* Tsuneki**

*Trypoxylon fronticorne burmanicum* Tsuneki, 1981d:41, ♂, ♀. Holotype: ♀, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:62 (in key).

### ***ssp. japonense* Tsuneki**

*Trypoxylon pennsylvanicum japonense* Tsuneki, 1956g:29, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:6, 9 (in key); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tsuneki, 1967g:44 (W Japan: Mount Hyonoson); Haneda, 1968a:44 (Japan); Tano, 1968:32 (Japan); Tsuneki, 1969e:25 (Japan), 1970b:9 (central Japan); Haneda, 1970:12 (Japan: Akita Prefecture); Nambu, 1971b:69 (nesting habits); Yamada, 1971:35 (Japan: Aichi Prefecture); Suda, 1972b:40 (Japan: city of Sakura); Nambu, 1973d:150 (Japan: Saitama Prefecture); Tsuneki, 1973a:15 (diagnostic characters), 1973e:33, 37 (in key); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1976d:297

(China: Manchuria); Kazenas, 1980e:91 (Russia: Far East); Tano, 1995:41 (holotype in K. Tsuneki collection, as *pennsylvanicum japonicum*); Hashimoto and Nakanishi, 1997:21-23 (holotype and paratypes transferred to Hyogo Mus.). – **As *Trypoxylon fronticorne japonense***: Tsuneki, 1979a:58 (new combination), 1979d:9 (Japan), 1981e:4 (in key), 28 (Japan; relation to *Trypoxylon pennsylvanicum*); Nemkov, 1992b:245 (Russia: Far East: Khingan Nature Reserve); Antropov in Nemkov, Kazenas, Budrys, et Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Nemkov, 2005a:148 (Russia: Sakhalin Island), 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve).

**ssp. *obliquum* Tsuneki**

*Trypoxylon fronticorne obliquum* Tsuneki, 1981c:13, ♀, ♂. Holotype: ♀, Taiwan: Chiayi Prefecture: Fenchihu (originally coll. K. Tsuneki, now USNM). – Tsuneki, 1981c:4, 5 (in key); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**ssp. *seoulense* Tsuneki**

*Trypoxylon fronticorne seoulense* Tsuneki, 1981e:30, ♀. Holotype: ♀, South Korea: northern suburb of Seoul (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1981e:4 (in key), 1982b:16 (known from Korea; as *seoulense*); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

**ssp. *shirozui* Tsuneki**

*Trypoxylon shirozui* Tsuneki, 1966b:14, ♀. Holotype: ♀, Taiwan: Nantou Prefecture: Sungkang (Kyushu Univ.). – Tsuneki, 1966b:3 (in key), 1967d:18 (Taiwan, ♂), 1968d:55 (Taiwan); Haneda, 1971b:31 (Taiwan); Tsuneki, 1971g:14 (Taiwan); Haneda, 1972a:5 (Taiwan); R. Bohart and Menke, 1976:348 (listed); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan). – **As *Trypoxylon fronticorne shirozui***: Tsuneki, 1981c:4, 5 (in key), 13 (Taiwan; new status); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**171. *fruticicola* Tsuneki**

*Trypoxylon fruticicola* Tsuneki, 1981d:14, ♀. Holotype: ♀, Sri Lanka: Sabaragamuwa Province: Ratnapura District: Gilimale, Induruwa Jungle (USNM). – Tsuneki, 1981d:20 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**172. *fulviventre* Tsuneki**

*Trypoxylon fulviventre* Tsuneki, 1979a:92, ♂. Holotype: ♂, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:11 (in key), 1981f:23 (single member of *fulviventre* species group).

**173. *fulvocollare* Cameron**

*Trypoxylon fulvocollare* Cameron, 1904d:217, ♀. Syntypes: ♀, India: Assam: Khasia Hills (OXUM). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:52 (redescription), 78 (in key), 1979a:12 (in key), 101 (Malaya, Laos; geogr. var.), 1979c:8 (in key), 42 (Indonesia: Sumatra), 1980a:7 (in key), 55 (Borneo; comments), 1980b:8 (in key), 70 (Philippines; geographic variation), 1981d:29 (India; additional description), 1981f:70 (single member of *fulvocollare* species group).

**174. *fumi* Tsuneki**

*Trypoxylon fumi* Tsuneki, 1979a:107, ♂. Holotype: ♂, Malaya: Kedah Peak: Djeraj (RMNH). – Tsuneki, 1979a:10, 12 (in key), 1979c:7 (in key), 40 (Indonesia: Sumatra; ♂ redescription, ♀), 1981f:58 (member of *coloratum* species group).

**175. *funatui* Tsuneki**

*Trypoxylon funatui* Tsuneki, 1963c:13, ♂, ♀. Holotype: ♂, Thailand: Muaglek (Sasayama). – Iwata, 1964b:373 (prey and nest, as *fuatui*); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978a:76 (redescription), 5 (in key), 1979a:19 (citation).



**176. gallopavo Antropov**

*Trypoxylon gallopavo* Antropov, 1995c:129, ♀. Holotype: ♀, Indonesia: Sulawesi: Dumoga Bone National Park (RMNH).

**177. gampahae Tsuneki**

*Trypoxylon gampahae* Tsuneki, 1981d:5, ♀. Holotype: ♀, Sri Lanka: Colombo District: Gampaha Botanical Garden (USNM). – Tsuneki, 1981d:19 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**178. gentingense Tsuneki**

*Trypoxylon gentingense* Tsuneki, 1981d:27, ♀. Holotype: ♀, Malaysia: Genting Highland (BMNH). – Tsuneki, 1981d:28 (in key).

**179. giganteum Tsuneki**

*Trypoxylon giganteum* Tsuneki, 1980b:123, ♀, ♂. Holotype: ♂, Philippines: Samar Island: no specific locality (USNM). – Tsuneki, 1980b:12 (in key), 1981f:52 (single member of *giganteum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

**180. gounellei Richards**

*Trypoxylon gounellei* Richards, 1934:310, ♀, ♂. Holotype: ♀, Brazil: São Paulo: Carqueira Cesar (MNHN). – Richards, 1934:345 (nesting behavior); R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**181. gracilescens F. Smith**

*Trypoxylon gracilescens* F. Smith, 1860a:85, ♀. Lectotype: ♀, Indonesia: Sulawesi: Makasar: no specific locality (OXUM), designated by Tsuneki, 1978b:18. – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Bingham, 1897:227 (redescription); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Tsuneki, 1973j:54 (first record from Japan); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:18 (redescription), 80 (in key), 1980a:9 (in key), 63 (Sulawesi; comments); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan). – **Neofollowing authors (= *Trypoxylon petiolooides*):** Tsuneki, 1966b:2, 3, 10, 1967d:9, 1968d:55; Haneda, 1971b:30; Tsuneki, 1971g:4; Haneda, 1972a:4; Murota, 1973b:117; Tsuneki, 1977j:272.

**182. gracilicorne Arnold**

*Trypoxylon gracilicorne* Arnold, 1946:68, ♂. Holotype: ♂, Malawi: Zomba (SAM). – Arnold, 1952:466 (Malawi, ♀); Leclercq, 1965a:88 (in key), 112 (citation); R. Bohart and Menke, 1976:346 (listed); Hancock, Chahwanda, and Mhlanga, 1995:40 (specimen in Bulawayo Museum).

**183. grenadense Richards**

*Trypoxylon grenadense* Richards, 1934:300, ♀, ♂. Holotype: ♀, Caribbeans: country not indicated: Beecher (BMNH). Paratype: Grenada. – R. Bohart and Menke, 1976:346 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**184. gressitti Tsuneki**

*Trypoxylon gressitti* Tsuneki, 1979a:23, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:3, 4 (in key).

**185. guadalense Tsuneki**

*Trypoxylon guadalense* Tsuneki, 1981a:95, ♀. Holotype: ♀, Solomon Islands: Guadalcanal: Paripao (BISH). – Tsuneki, 1981a:9 (in key).

**186. guichardi Antropov**

*Trypoxylon guichardi* Antropov, 1995c:127, ♂. Holotype: ♂, Turkey: Karahana (K. Guichard coll.).

**187. gussachaos Menke**

*Trypoxylon carinifrons* Gussakovskij, 1936:657, ♀, primary homonym of *Trypoxylon carinifrons* Cameron, 1889, and of *Trypoxylon carinifrons* W. Fox, 1891. Holotype: ♀, Kazakhstan: Alma-Ata (ZIL). – Kazenas, 1972b:156 (Kazakhstan), 1978b:146 (in key to Sphecidae of Kazakhstan and Central Asia).

*Trypoxylon gussachaos* Menke in Bohart and Menke, 1976:346. Substitute name for *Trypoxylon carinifrons* Gussakovskij, 1936. – Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:85 (geographic distribution, collecting localities in Kazakhstan).

#### 188. *gustatum* Leclercq

*Trypoxylon gustatum* Leclercq, 1965a:117, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:92 (in key); R. Bohart and Menke, 1976:346 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

#### 189. *halcon* Tsuneki

*Trypoxylon halcon* Tsuneki, 1980b:119, ♀. Holotype: ♀, Philippines: Mindoro: Alcate Vict (AEI). – Tsuneki, 1980b:11 (in key).

#### 190. *himachalense* Tsuneki

*Trypoxylon himachalense* Tsuneki, 1979a:60, ♂, ♀. Holotype: ♂, India: Simla (either Himachal Pradesh, or Calcutta) (BMNH). – Tsuneki, 1979a:8 (in key), 1981f:37 (member of *pacificum* species group).

#### 191. *hollandiae* Tsuneki

*Trypoxylon hollandiae* Tsuneki, 1981a:36, ♀. Holotype: ♀, New Guinea: Humboldt Bay: Hollandia (BMNH). – Tsuneki, 1981a:6 (in key).

#### 192. *hollisi* Tsuneki

*Trypoxylon hollisi* Tsuneki, 1980a:98, ♂. Holotype: ♂, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:13 (in key), 1981f:65 (member of *vardyi* species group).

#### 193. *hova de Saussure*

*Trypoxylon hova de Saussure*, 1892:525, ♀. Syntypes: ♀, Madagascar: Antananarivo (MHNG). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Arnold, 1945:9 (Madagascar; description of ♂); Leclercq, 1960a:99 (Madagascar); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1981d:85 (Madagascar: Isalo, Mahajanga); Madl, 1997:820 (Madagascar: Nosy Boraha Island), 821 (in checklist of Nosy Boraha Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

#### 194. *hyperorientale* Strand

*Trypoxylon hyperorientale* Strand, 1922b:156, ♀, ♂. Holotype: ♂, Taiwan: Kankau, now Hengchun (DEI). – Richards, 1934:315 (member of *figulus* species group); Tsuneki, 1966b:10 (synonymized with *Trypoxylon obsonator*); Oehlke and Wudowenz, 1974:423 (holotype and paratypes in DEI); Tsuneki, 1981c:8, 10 (in key), 38 (Taiwan; resurrected from synonymy; additional description), 1981f:74 (single member of *hyperorientale* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon vallicola* Tsuneki, 1971g:6, ♀, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Pempuchi (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon hyperorientale* by Tsuneki, 1981c:38. – Tsuneki, 1973f:44 (Taiwan); Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1977c:7 (Taiwan); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

#### 195. *imayoshii* Yasumatsu

*Trypoxylon imayoshii* Yasumatsu, 1938g:451 and 453, ♀. Holotype: ♀, Japan: Kyushu: Yoshiwara at the foot of Mt. Inugadake (Kyushu Univ.). – Tsuneki, 1956g:4, 8 (in key), 19 (revision; description of ♂); Tano, 1968:32 (Japan); Tsuneki, 1972b:5 (redescription); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Haneda, 1970:12

(Japan: Akita Prefecture); Tsuneki, 1973e:32, 36 (in key); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1981e:6 (in key), 53 (Japan; redescription), 1981f:36 (single member of *imayoshii* species group); Antropov, 1988:87 (description of ♂, Russia: Primorskiy Kray); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine).

#### 196. *inconstans* Arnold

*Trypoxylon inconstans* Arnold, 1946:70, ♀. Syntypes: ♀, Zimbabwe: Umtali (SAM). – Leclercq, 1965a:89 (in key), 114 (citation); R. Bohart and Menke, 1976:346 (listed).

#### 197. *indianum* Tsuneki

*Trypoxylon indianum* Tsuneki, 1979a:29, ♀. Holotype: ♀, India: Tamil Nadu: Tinnevely District: Dohnavur (BMNH). – Tsuneki, 1979a:3 (in key), 1979b:3 (in key), 9 (Sri Lanka), 1981d:5 (Sri Lanka), 22 (India), 18 (in key).

#### 198. *infimum* Arnold

*Trypoxylon infimum* Arnold, 1940:101, ♀, ♂. Syntypes: Zimbabwe: Chirinda Forest (SAM). – Leclercq, 1965a:84 (in key), 103 (revision); R. Bohart and Menke, 1976:346 (listed).

#### 199. *inopinatum* Antropov

*Trypoxylon inopinatum* Antropov, 1986b:625, ♂. Holotype: ♂, Russia: Lazarevskoye N Sochi (ZIL). – Antropov, 1991b:680 (in revision of *attenuatum* group); Antropov *in* Bitsch et al., 2001:370 (in Sphecid Fauna of Western Europe).

#### 200. *insolitum* W. Fox

*Trypoxylon insolitum* W. Fox, 1897b:384, ♀, ♂. Lectotype: ♀, Brazil: Pará: Santarém (Carnegie Mus.), designated by Menke *in* Bohart and Menke, 1976:346. – Richards, 1934:281 (member of *fabricator* species group); R. Bohart and Menke, 1976:346 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

#### 201. *insulare* Tsuneki

*Trypoxylon* [sic] *insulare* Tsuneki, 1976b:88, ♀. Holotype: ♀, Philippines: Tawi Tawi: Tarawakan (ZMK). – Tsuneki, 1980b:10 (in key), 91 (Philippines; additional description), 1981f:48 (member of *insulare* species group).

#### *ssp. rufomaculatum* Tsuneki

*Trypoxylon insulare rufomaculatum* Tsuneki, 1980b:94, ♀. Holotype: ♀, Philippines: Luzon: Camarines Sur: Mt. Isalog (BISH). – Tsuneki, 1980b:10 (in key).

#### 202. *insulsum* Arnold

*Trypoxylon insulsum* Arnold, 1959:318, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:120 (as questionable synonym of *lacustre*); R. Bohart and Menke, 1976:347 (as questionable synonym of *Trypoxylon lacustre*).

#### 203. *interruptum* Tsuneki

*Trypoxylon interruptum* Tsuneki, 1978a:68, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1978a:5 (in key), 1979a:19 (citation), 1979b:3 (in key), 6 (Sri Lanka), 1979c:11 (citation), 1980a:16 (Sarawak), 1981d:18 (in key).

#### 204. *iriomotense* Tsuneki

*Trypoxylon iriomotense* Tsuneki, 1981c:3, 5 (in key), ♀. Holotype: ♀, Ryukyu Islands: Iriomote Island: Komi (coll. T. Nambu). – Tsuneki, 1981e:3 (in key), 9 (citation), 1982g:62 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan).

**205. *jacobsoni* Tsuneki**

*Trypoxylon jacobsoni* Tsuneki, 1979c:12, ♂, ♀. Holotype: ♂, Indonesia: Sumatra: Sungal Kumbang (RMNH). – Tsuneki, 1979c:4 (in key), 1981f:26 (single member of *jacobsoni* species group).

**206. *javanense* Tsuneki**

*Trypoxylon javanense* Tsuneki, 1979c:24, ♂, ♀. Holotype: ♂, Indonesia: West Java: Megamendoeng (RMNH). – Tsuneki, 1979c:5 (in key), 1980a:5 (in key), 31 (Sarawak; additional description), 1981f:35 (member of *varipes* species group).

**207. *javanicum* Tsuneki**

*Trypoxylon javanicum* Tsuneki, 1979c:42, ♀, ♂. Holotype: ♀, Indonesia: West Java: Mt. Gedeh: Sitoegoenoeng (RMNH). – Tsuneki, 1979c:8 (in key), 1981f:58 (member of *coloratum* species group).

**208. *johnsoni* W. Fox**

*Trypoxylon johnsoni* W. Fox, 1891c:147, ♀ (as *Johnsoni*, incorrect original capitalization). Holotype or syntypes: ♀, USA: Florida: no specific locality (USNM). – Viereck, 1893e:132 (New Jersey: Riverton); W. Fox, 1894a:501 (in revision of North American Larrinae); Rohwer, 1916b:686 (in catalog of W. Fox, 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Rau, 1918:137 (nesting habits), 1922:22 (USA: Missouri: St. Louis, nesting habits); Richards, 1934:293 (revision), 344 (life history summary); Brimley, 1938:443 (North Carolina: Raleigh); Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); Krombein, 1959e:199 (USA: North Carolina: Kill Devil Hills), 1963f:273 (Maryland: Plummers Island near Washington, D.C.), 1967b:230 (life history observed in artificial nests); Bohart and Menke, 1976:346 (listed); L. Davis, 1978:218 (North Carolina: Kill Devil Hills, data from Krombein, 1959e); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Sugar *et al.*, 1998:15 (Canada: southern Ontario); Coville, 1990:20 (specimens currently regarded as *johnsoni* are two sympatric species); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada).

*Trypoxylon ornatipes* W. Fox, 1891c:148, ♂. Lectotype: ♂, USA: District of Columbia (ANSP), designated by Cresson, 1928:55. Synonymized with *Trypoxylon johnsoni* by Sandhouse, 1940:141. – W. Fox, 1891e:195 (additional description), 1894a:476 (in revision of North American Larrinae); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:297 (revision).

*Trypoxylon adelphiae* Sandhouse, 1940:151, ♂, ♀. Holotype: ♂, USA: Tennessee: Cedar Glade (USNM). Synonymized with *Trypoxylon johnsoni* by Krombein, 1962a:11. – Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park); Krombein and Evans, 1954:233 (Florida: Paradise Key), 1955:232 (Florida: Paradise Key); Krombein, 1956b:154 (West Virginia: Lost River State Park); Evans, 1957b:97 (larva).

**209. *judicum* Leclercq**

*Trypoxylon judicum* Leclercq, 1965a:112, ♀, ♂. Holotype: ♂, Zaire: Maniema: Kasongo (MRAC). – Leclercq, 1965a:89 (in key); R. Bohart and Menke, 1976:346 (listed).

**210. *kabeyae* Leclercq**

*Trypoxylon kabeyae* Leclercq, 1965a:107, ♀, ♂. Holotype: ♀, Zaire: Haut-Uele: Paulis (MRAC). – Leclercq, 1965a:84 (in key); R. Bohart and Menke, 1976:346 (listed); Antropov, 1993b:54 (Central African Republic).

**211. *kachin* Tsuneki**

*Trypoxylon kachin* Tsuneki, 1981d:46, ♀. Holotype: ♀, Burma: Myitkyina (Stockholm). – Tsuneki, 1981d:62 (in key).

**212. *kaitum* Tsuneki**

*Trypoxylon kaitum* Tsuneki, 1981a:40, ♀. Holotype: ♀, New Guinea: "Camp Bishop" 12 km up Kait River (BISH). – Tsuneki, 1981a:6 (in key).

**ssp. *kaitum umboiense* Tsuneki**

*Trypoxylon kaitum umboiense* Tsuneki, 1981a:41, ♀. Holotype: ♀, Umboi Island (between New Guinea and New Britain): 1 km N Awelkom (BISH). – Tsuneki, 1981a:6 (in key).

**213. *kalabakan* Tsuneki**

*Trypoxylon kalabakan* Tsuneki, 1980a:29, ♀. Holotype: ♀, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:5, 6 (in key).

**214. *kalilicum* Tsuneki**

As *Trypoxylon bismarckianum*: Tsuneki, 1977h:7, corrected to *Trypoxylon kalilicum* by Tsuneki, 1981a:90.

*Trypoxylon kalilicum* Tsuneki, 1981a:90, ♂, ♀. Holotype: ♂, Bismarck Archipelago: New Ireland: Danu: Kalili Bay (ZMK). – Tsuneki, 1981a:10 (in key), 1981f:77 (member of *sacinasium* species group), 1982a:46 (Bismarck Archipelago).

**215. *kalimantan* Menke**

*Trypoxylon annulipes* Cameron, 1903d:164, ♀, primary homonym of *Trypoxylon annulipes* Taschenberg, 1875. Holotype or syntypes: ♀, Malaysia: Borneo (Sarawak): Mt. Matang (BMNH). – Tsuneki, 1978b:50 (redescription), 78 (in key).

*Trypoxylon kalimantan* Menke in Bohart and Menke, 1976:346. Substitute name for *Trypoxylon annulipes* Cameron, 1903. – Tsuneki, 1979c:8 (in key), 47 (Indonesia: Java), 1980a:8 (in key), 57 (Borneo).

**216. *kambaitium* Tsuneki**

*Trypoxylon kambaitium* Tsuneki, 1981d:35, ♂, ♀. Holotype: ♂, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:38, 61 (in key), 1981f:27 (single member of *kambaitium* species group).

**217. *kandyianum* Tsuneki**

*Trypoxylon kandyianum* Tsuneki, 1979b:17, ♀. Holotype: ♀, Sri Lanka: Central Province: Kandy District: Udawat-takele Sanctuary (USNM). – Tsuneki, 1979b:4 (in key), 1981d:19 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**218. *kansitakum* Tsuneki**

*Trypoxylon kansitakum* Tsuneki, 1971g:8, ♂. Holotype: ♂, Taiwan: Chiai Prefecture: Kansitaku, now Kuanghua (originally K. Tsuneki coll., now USNM). – R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1981c:4, 6 (in key), 15 (Taiwan; additional description), 1981f:35 (member of *varipes* species group); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**219. *kapiricum* Leclercq**

*Trypoxylon kapiricum* Leclercq, 1965a:105, ♀, ♂. Holotype: ♀, Zaire: Kibali Ituri Kilo (MRAC). Paratypes: Burundi, Rwanda. – Leclercq, 1965a:85 (in key); R. Bohart and Menke, 1976:346 (listed); Antropov, 1993b:54 (Central African Republic).

**220. *karimui* Tsuneki**

*Trypoxylon karimui* Tsuneki, 1981a:15, ♂. Holotype: ♂, New Guinea: Karimui (BISH). – Tsuneki, 1981a:4 (in key), 1981f:42 (member of *kuchingense* species group).

**221. *kashmirensis* Tsuneki**

*Trypoxylon attenuatum kashmirensis* Tsuneki, 1979a:66, ♀. Holotype: ♀, India: Kashmir: no specific locality (BMNH). – Tsuneki, 1979a:8 (in key). – As *Trypoxylon kashmirensis*: Antropov, 1991b:681 (full species status, in revision of *attenuatus* group).

**222. *katangae* Leclercq**

*Trypoxylon katangae* Leclercq, 1965a:113, ♀. Holotype: ♀, Zaire: Elisabethville, now Lubumbashi (MRAC). – Leclercq, 1965a:89 (in key); R. Bohart and Menke, 1976:346 (listed).

**223. *katsuuense* Tsuneki**

*Trypoxylon rufiventre* Tsuneki, 1990a:85, ♀, primary homonym of *Trypoxylon rufiventre* Tsuneki, 1976. Holotype: ♀, Japan: Okinawa: Mount Katsu-u-dake (originally K. Tsuneki coll., now Hyogo Mus.). – Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

*Trypoxylon katsuuense* Tsuneki, 1992c:54. Substitute name for *Trypoxylon rufiventre* Tsuneki, 1990.

**224. *kedah* Tsuneki**

*Trypoxylon kedah* Tsuneki, 1979a:33, ♀. Holotype: ♀, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:4 (in key).

**225. *kepongianum* Tsuneki**

*Trypoxylon kepongianum* Tsuneki, 1979a:139, ♂. Holotype: ♂, Malaya: Kepong (BISH). – Tsuneki, 1979a:14, 18 (in key), 1981f:60 (member of *kepongianum* species group).

**ssp. *miserum* Tsuneki**

*Trypoxylon kepongianum miserum* Tsuneki, 1980a:95, ♂. Holotype: ♂, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:12 (in key).

**226. *khasiae* Cameron**

*Trypoxylon khasiae* Cameron, 1904d:218, ♀. Holotype or syntypes: ♀, India: Assam: Khasia Hills (OXUM). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:346 (listed); Tsuneki, 1978b:54 (redescription), 80 (in key), 1979a:11, 12 (in key), 84 (India, Laos, Malaya, Thailand; comments; Malayan specimens = *Trypoxylon varipilosum*), nec 1979c:7, 8, 9, 36 (= *Trypoxylon varipilosum*), 1980a:2 (*Trypoxylon varipilosum* and *yumi* possibly are geographic forms of *khasiae*), 1981f:58 (member of *coloratum* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

**227. *kinabalum* Tsuneki**

*Trypoxylon kinabalum* Tsuneki, 1980a:79, ♀. Holotype: ♀, North Borneo: Mt. Kinabalu: Lumu Lumu (BMNH). – Tsuneki, 1980a:6, 10 (in key).

**228. *kitulgalaense* Tsuneki**

*Trypoxylon kitulgalaense* Tsuneki, 1981d:12, ♀. Holotype: ♀, Sri Lanka: Sabaragamuwa Province: Kegalla District: Kegalla: Kitulgala, Bandarakale Jungle (USNM). – Tsuneki, 1981d:18, 19 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**229. *klapperichi* Balthasar**

*Trypoxylon klapperichi* Balthasar, 1957b:198, ♀. Holotype: ♀, Afghanistan: Nuristan: Bashgul Valley: Ahmede Devane (V. Balthasar coll.). – R. Bohart and Menke, 1976:346 (listed).

**230. *kodamanum* Tsuneki**

*Trypoxylon kodamanum* Tsuneki, 1972b:9, ♀, ♂. Holotype: ♂, Japan: Saitama Prefecture: Kodama (originally K. Tsuneki coll., now Hyogo Mus.). – Nambu, 1973d:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 37 (in key); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:4 (in key), 34 (Japan; additional description), 1981f:37 (member of *pacificum* species group); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

**231. kohli Arnold**

*Trypoxylon kohli* Arnold, 1924:24, ♂, ♀ (as *Kohli*, incorrect original capitalization). Syntypes: South Africa: Transvaal: Pretoria; and Zimbabwe: Bulawayo (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:338 (member of *scutatum* species group); Leclercq, 1965a:96, 98, and 100 (in key), 123 (revision; Zaire); R. Bohart and Menke, 1976:347 (listed); Antropov, 1993b:54 (Central African Republic); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

**232. koikense Tsuneki**

*Trypoxylon koikense* Tsuneki, 1956g:35, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Koike (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:6, 10 (in key); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tano, 1971:81 (Japan: Shikoku: Mt. Tsurugi); Haneda, 1968a:44 (Japan); Tsuneki, 1973e:35, 37 (in key); Nambu, 1973d:150 (Japan: Saitama Prefecture); Tsuneki, 1973v:150 (prey); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:5 (in key), 43 (Japan; redescription), 1981f:33 (single member of *koikense* species group); Antropov, 1986a:90 (Russia: Primorskiy Krai); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:420, 421 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:20 (holotype and allotype transferred to Hyogo Mus.); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine)

**233. kokodaense Tsuneki**

*Trypoxylon kokodaense* Tsuneki, 1981a:66, ♂. Holotype: ♂, Papua New Guinea: Kokoda (BMNH). – Tsuneki, 1981a:8 (in key), 1981f:76 (member of *sacinasium* species group).

**234. kolambuganum Tsuneki**

*Trypoxylon kolambuganum* Tsuneki, 1980b:52, ♂. Holotype: ♂, Philippines: Mindanao: Kolambugan (USNM). – Tsuneki, 1980b:6 (in key), 1981f:48 (member of *insulare* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**235. kolazyi Kohl**

*Trypoxylon kolazyi* Kohl, 1893a:29, ♂, ♀ (as *Kolazyi*, incorrect original capitalization). Syntypes: Austria: Niederösterreich: Bühl; and Krain: Wippach, now Yugoslavia: Vipava (NHMW). – Krieger, 1894:10 (Croatia: Dalmatia); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Mercet, 1906c:466 (in key to Palearctic species); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); Dusmet y Alonso, 1915:87 (Spain: Aragón); Schmiedeknecht, 1930:712 (in keys to Hymenoptera of North and Central Europe); Dusmet y Alonso, 1935:80 (Spain: Ambel); Zavadil, Šustera, and Baťa, 1937:222 (in catalog of Sphecidae of Czechoslovakia); Zavadil, 1939:121 (Czech Republic: Morava: Tišnov); Giner Marí, 1943a:217 (in Sphecid Fauna of Spain); de Beaumont, 1947b:396 (Cyprus); Šnoflak *in* Zavadil and Šnoflak, 1948:59 (in key to Sphecidae of Czechoslovakia); Pitoni, 1950:26 (Cyprus); de Beaumont, 1954e:92 (Italy); Grandi, 1954:238 (Italy); Vogrin, 1955:40 (Yugoslavia); Bajári, 1957a:67 (in key to Hungarian Sphecidae), 1957b:136 (first record from Hungary); Wolf, 1958:13 (Germany: Plettenberg), 1959b:25 (Germany: Nassau); de Beaumont, 1960a:21 (Greece: Rhodes Island), 1960b:247 (Libya); Noskiewicz and Puławski, 1960:109 (in key to Polish Sphecidae); de Beaumont, 1964c:85 (in Sphecid Fauna of Switzerland), 1967a:338 (Turkey); Romanova, 1969:134 (Russia: North Caucasus); Suárez, 1969:32 (Spain: Almería Province); Oehlke, 1970:725 (not recorded from Democratic Germany); Balthasar, 1972:229 (in Sphecid Fauna of Czechoslovakia); Kazenas, 1972b:156 (Kazakhstan); R. Bohart and Menke, 1976:347 (listed); Eck, 1976:91 (Democratic Germany); Georghiou, 1977:193 (Cyprus); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia); Puławski, 1978:253 (in key to Sphecidae of European part of former USSR); Benedek, 1979:232 (Hungary: Bakony Hills); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Pagliano, 1980:129 (Italy: Piemonte); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Skibińska, 1982:119, 123 (Poland: Mazovian Voivodship: Warszawa); Dollfuss, 1983b:12 (Austria); Coville, 1984:256 (comparison with *Trypoxylon clavicerum*); Józán, 1985b:57 (recorded from Simon-

tornya by Bajári, 1957); Islamov, 1986:528 (Uzbekstan: Tashkent Oblast'); Dollfuss, 1988:13 (Austria: Bisamberg); Gayubo and Mingo, 1988:88 (Spain); Dollfuss, 1989:13 (lectotype in NHMW); Pádr *in* Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:123 (citation of Eck, 1976); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Day, 1991:xix (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:404 (Italy: Veneto); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Schembri, 1991:181 (new to Malta); Kuhlmann, 1993:76 (Germany: recorded from Westfalen by Wolf, 1959); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Schmid-Egger, Risch, and Niehuis, 1995:214 (Bettag's record from Germany actually is *Trypoxylon clavicerum*); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Wiśniowski and Kowalczyk, 1998:221 (Poland: Sandomierz Lowland: Wojnicz); Ljubomirov, 1999b:51 (Bulgaria: Mt. Vitosha near Sofia); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:254 (in Sphecid Fauna of Germany); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Zettel, 2000:28 (Austria: Wien); Antropov *in* Bitsch et al., 2001:379 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Skevington et al., 2001:128 (Canada: Ontario: Lambton County); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Wiśniowski, 2002:70 (Poland: Ojców National Park); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: İspir); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorillo in Sierra de Guadarrama); Pagliano, 2003b:132 (Italy: Island of Lampedusa); Schmid-Egger, 2003:759 (Italy: Sicilia: Castelammare, Umbria: Montefalco; Malta: Mgarr, Ramla); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 55 (first record from Canada: Ontario: list of localities; previous records by Romel and Dykstra, 1991b, and Sugar et al., 1998, as *Trypoxylon backi*, are doubtful); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorillo in Sierra de Guadarrama); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:93 (in key to Polish *Trypoxylon*); Yıldırım and Ljubomirov, 2005:1799 (Turkey: Erzurum: Oltu); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E); Tomarchio and Turrisi, 2006:957 (Italy: Sicilia: Catania and Mount Etna).

*Trypoxylon backi* Sandhouse, 1940:164, ♂, ♀. Holotype: ♂, USA: Maryland: Baltimore (USNM). Synonymized with *Trypoxylon kolazyi* by Coville *in* Krombein et al., 1979:1644. – Brimley, 1942:36 (North Carolina: Durham, Morganton, Raleigh); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck et al., 1951:955 (in catalog of North American Hymenoptera); Krombein, 1956a:42 (prey), 1956b:154 (West Virginia: Lost River State Park), 1958b:21 (prey), 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:273 (Maryland: Plummers Island near Washington, D.C.; prey); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Krombein, 1967b:227 (life history observed in artificial nests); R. Bohart and Menke, 1976:345 (listed); Romel and Dykstra, 1991b:39 (Canada: Ontario: Milton; nesting in antique farm equipment); Sugar et al., 1998:16 (Canada: southern Ontario).

### 236. *kolthoffi* Gussakovskij



*Trypoxylon kolthoffi* Gussakovskij, 1938:4, ♀ (as *Kolthoffi*, incorrect original capitalization). Holotype: ♀, China: Kiangsu Province: no specific locality (Stockholm). – R. Bohart and Menke, 1976:347 (listed); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

### 237. *koma* Tsuneki

*Trypoxylon figulus koma* Tsuneki, 1956g:28, ♀, ♂. Holotype: ♀, North Korea: Mt. Kodai, near 38°N (originally K. Tsuneki coll., now Hyogo Mus.). – R. Bohart and Menke, 1976:346 (listed); Kazenas, 1980e:90 (Russia: Primorskiy Kray); Tsuneki, 1981e:3 (in key), 20 (Korea: Mt. Sambo, Seoul; redescription), Tsuneki, 1982b:6 (Korea), 1982b:16 (known from Korea); Pulawski, 1984:132 (as synonym of *Trypoxylon figulus*); Tano, 1995:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon koma***: Antropov, 1987:58 (new status, diagnostic characters; Russia: Primorskiy Kray); Nemkov, 1992b:245 (Russia: Far East: Khingan Nature Reserve); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve).

### 238. *konosuense* Tsuneki

*Trypoxylon konosuense* Tsuneki, 1968a:3, ♀. Holotype: ♀, Japan: Saitama Prefecture: Konosu (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1968o:66 (recognition characters), 1973e:32 (in key); Nambu, 1975b:65 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:6 (in key), 61 (Japan; additional description); Antropov, 1986a:89 (Russia: Primorskiy Kray), 1988:85 (description of ♂, Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

### 239. *koreanum* Tsuneki

As *Trypoxylon varipes*: Gussakovskij, 1932:12 (Ussuri Region) and 1936:664 (revision), corrected to *Trypoxylon koreanum* by Antropov, 1995c:124.

*Trypoxylon koreanum* Tsuneki, 1956g:32, ♂. Holotype: ♂, Korea: Keijo (originally K. Tsuneki coll., now USNM). – Tsuneki, 1956g:11 (in key); R. Bohart and Menke, 1976:347 (listed); Kazenas, 1980e (Russia: Primorskiy Kray); Tsuneki, 1981e:38 (Japan; additional description), 1981f:37 (member of *pacificum* species group), 1982b:16 (known from Korea); Antropov, 1986a:90 (Russia: Primorskiy Kray), 1995c:124 (synonymy, faunal records from China and Russian Far East, diagnostic characters); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:420, 422 (in key to Sphecidae of Russian Far East); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Nemkov, 2005a:148 (Russia: Sakhalin Island), 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon mowchowense* Tsuneki, 1981d:71, ♀. Holotype: ♀, China: Szechuan: Mowchow (USNM). Synonymized with *Trypoxylon koreanum* by Antropov, 1995c:124. – Nuhn and Menke, 1994:26 (holotype in USNM).

*Trypoxylon okeanskayanum* Tsuneki, 1981d:86, ♂, ♀. Holotype: ♂, Russia: Primorskiy Kray: Okeanskaya (USNM). Synonymized with *Trypoxylon koreanum* by Antropov, 1986a:90. – Tsuneki, 1981f:37 (member of *pacificum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

### 240. *koshunicon* Strand

*Trypoxylon koshunicon* Strand, 1922b:149, ♂. Holotype: ♂, Taiwan: Kankau, now Hengchun (DEI). – Tsuneki, 1966b:3 (in key; also as *koshunicon koshunicon*), 16 (Taiwan; redescription; ♀ which actually = *Trypoxylon quadriceps*), 1968d:55 (Taiwan), nec 1971g:16 (♀, in key = *Trypoxylon quadriceps*); Oehlke and Wudowenz, 1974:424 (holotype in DEI); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981c:6 (in key), 18 (Taiwan; additional description); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**241. *kostylevi* Antropov**

*Trypoxylon kostylevi* Antropov, 1985a:632, ♂. Holotype: ♂, Georgia: Sukhumi area (ZMMU). – Gusenleitner, 1991:646 (Austria: Niederösterreich: St. Ulrich); Antropov *in* Bitsch et al., 2001:379 (in Sphecid Fauna of Western Europe); Baugnée, 2003:63 (Belgium: Namur: Ri d’Hôwisse).

**242. *krombeini* Tsuneki**

*Trypoxylon krombeini* Tsuneki, 1979b:13, ♂, ♀. Holotype: ♂, Sri Lanka: Savaragamuwa Province: Ratnapura District: Sinharaja Forest: Weddagala (USNM). – Tsuneki, 1979b:4 (in key), 1981d:11 (Sri Lanka; additional description), 18, 19, 20 (in key), 1981f:15 (single member of *krombeini* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**243. *kuchingense* Tsuneki**

*Trypoxylon kuchingense* Tsuneki, 1980a:24, ♂, ♀. Holotype: ♂, Sarawak: Kuching: Santubong (BPBM). – Tsuneki, 1980a:5 (in key), 1981f:42 (member of *kuchingense* species group).

**244. *kuncheriai* Tsuneki**

*Trypoxylon kuncheriai* Tsuneki, 1980a:42, ♀. Holotype: ♀, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:6 (in key).

**245. *kunzui* Tsuneki**

*Trypoxylon kunzui* Tsuneki, 1981d:73, ♀. Holotype: ♀, South China: Loh Fan Shaan (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**246. *kutuense* Tsuneki**

*Trypoxylon kutuense* Tsuneki, 1979a:171, ♀. Holotype: Malaya: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:17 (in key).

**247. *kyotoense* Tsuneki**

*Trypoxylon kyotoense* Tsuneki, 1966a:22, ♀. Holotype: ♀, Japan: Kyoto Prefecture: Kibune (Osaka). – Tsuneki, 1968o:66 (recognition characters), 1969e:25 (Japan), 1973e:33 (in key); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:7 (in key), 75 (Japan; redescription).

**248. *lacustre* Arnold**

*Trypoxylon lacustris* Arnold, 1956:76, ♂, incorrect original termination. Syntypes: ♂, Uganda: Jinja on Lake Victoria (SAM). – **As *Trypoxylon lacustre***: Leclercq, 1965a:94 (in key), 120 (revision; Zaire); R. Bohart and Menke, 1976:347 (listed); Antropov, 1993b:54 (Central African Republic).

**249. *lae* Tsuneki**

*Trypoxylon lae* Tsuneki, 1981a:75, ♀, ♂. Holotype: ♂, New Guinea: Morobe Province: Zeng-Lae road (BISH). – Tsuneki, 1981a:9 (in key), 1981f:77 (member of *eximium* species group).

**ssp. *baiyerum* Tsuneki**

*Trypoxylon lae baiyerum* Tsuneki, 1981a:79, ♂. Holotype: ♂, New Guinea: Western Highland District: Baiyer River (AEI). – Tsuneki, 1981a:9 (in key).

**250. *laeviceps* Tsuneki**

*Trypoxylon laeviceps* Tsuneki, 1976b:83, ♂. Holotype: ♂, Philippines: Tawi Tawi: Tarawakan (ZMK). – Tsuneki, 1980a:5, 9 (in key), 22 (Borneo; ♀), 1980b:5, 6 (in key), 35 (Philippines; additional description), 1981f:23 (member of *appendiculatum* species group).

**251. *laevadorsum* Tsuneki**

*Trypoxylon laevadorsum* Tsuneki, 1979a:88, ♀. Holotype: ♀, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:11 (in key).

**252. lagunaense Tsuneki**

*Trypoxylon lagunaense* Tsuneki, 1980b:78, ♀. Holotype: ♀, Philippines: Luzon: Los Baños (AEI). – Tsuneki, 1980b:8 (in key).

**253. lamellatum Tsuneki**

*Trypoxylon lamellatum* Tsuneki, 1979a:136, ♀. Holotype: ♀, India: Kerala: Waldyar forests (USNM). – Tsuneki, 1979a:14 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**254. langkawiense Tsuneki**

*Trypoxylon langkawiense* Tsuneki, 1979a:118, ♀. Holotype: ♀, Malaya: west coast: Langkawi Island (BMNH). – Tsuneki, 1979a:13 (in key).

**255. laosense Tsuneki**

*Trypoxylon laosense* Tsuneki, 1979a:90, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:11 (in key).

**256. laosianum Tsuneki**

*Trypoxylon laosianum* Tsuneki, 1979a:95, ♀, ♂. Holotype: Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:10, 11 (in key), 1981f:32 (single member of *laosianum* species group).

**257. latilobatum Antropov**

*Trypoxylon latilobatum* Antropov, 1991b:678, ♀, ♂. Holotype: ♂, Spain: Cadiz: Conil de la Frontera (ZMMU). Paratypes: France. – Mochi and Luchetti, 1994:15 (Italy: Lazio, Toscana); Pagliano, 1994:16 (Italy: Piemonte, Corsica); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Scaramozzino, 1999:164 (Italy: Piemonte: Borgomale); Gonzáles, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Antropov *in* Bitsch et al., 2001:370 (in Sphecid Fauna of Western Europe); Gayubo, Özbek, and Yıldırım, 2003:91 (first record from Turkey: Bilecik and Erzurum Provinces); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Yildirim and Ljubomirov, 2005:1800 (Turkey: Erzurum: Aşkale).

**258. latiscutatum Arnold**

*Trypoxylon latiscutatum* Arnold, 1946:72, ♀. Syntypes: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:97 and 100 (in key), 124 (revision; Zaire); R. Bohart and Menke, 1976:347 (listed); Antropov, 1993b:54 (Central African Republic).

**ssp. retirugosum Arnold**

*Trypoxylon latiscutatum retirugosum* Arnold, 1959:316, sex not indicated. Syntypes: Tanzania: Rukwa Valley (BMNH). – R. Bohart and Menke, 1976:347 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

**259. latro Menke and Richards**

*Trypoxylon latro* Menke and Richards *in* Matthews, 1983:152, ♂, ♀. Holotype: ♂, Costa Rica: Puntarenas Province: Corcovado National Park (USNM). – Matthews, 1983:156 (life history: utilizing nests of *Microstigmus comes*); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**260. layouanum Evans**

*Trypoxylon layouanum* Evans, 1972b:16, ♂. Holotype: ♂, Caribbeans: Dominica Island: Clarke Hall in Layou Valley (USNM). – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**261. leptogaster Kohl**

*Trypoxylon leptogaster* Kohl, 1894:291, ♂. Holotype: ♂, "West Africa: Eloby" (TMP). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Arnold, 1924:14 (revision), 1930:10 (in checklist of Afrotropical Sphecidae);

Schouteden, 1930:93 (Zaire, determination?); Leclercq, 1965a:87 and 88 (in key), 109 (revision, Zaire); R. Bohart and Menke, 1976:347 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Antropov, 1993b:54 (Central African Republic).

**262. *letiferum* Arnold**

*Trypoxylon letiferum* Arnold, 1946:68, ♀. Holotype: ♀, Zimbabwe: Umtali (SAM). – Leclercq, 1965a:88 (in key), 111 (citation); R. Bohart and Menke, 1976:347 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains);.

**263. *leucarthurum* Richards**

*Trypoxylon leucarthurum* Richards, 1934:304, ♀. Holotype: ♀, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:114 (the type female was taken collecting mud); R. Bohart and Menke, 1976:347 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**264. *licimum* Tsuneki**

*Trypoxylon licimum* Tsuneki, 1980b:121, ♀. Holotype: ♀, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:12 (in key; as *licinum*); Nuhn and Menke, 1994:26 (holotype in USNM).

**265. *lieftincki* Tsuneki**

*Trypoxylon lieftincki* Tsuneki, 1981a:73, ♀. Holotype: ♀, New Guinea: West Irian: Vogel Kop: Sorong (RMNH). – Tsuneki, 1981a:8 (in key).

**266. *lissonotum* Cameron**

*Trypoxylon lissonotum* Cameron, 1910:152, ♀. Holotype or syntypes: ♀, South Africa: Transvaal: Pretoria (TMP). – Brauns, 1917:241 (type in TMP); Arnold, 1924:19 (revision), 1930:10 (in checklist of Afrotropical Sphecidae); de Meillon, 1935:51 (nesting in glass tube of fountain-pen-filler); Leclercq, 1965a:89 (in key), 115 (citation); R. Bohart and Menke, 1976:347 (listed).

**267. *lobatifrons* Tsuneki**

*Trypoxylon lobatifrons* Tsuneki, 1979a:131, ♀. Holotype: ♀, Laos: Wapikhamthong Province: Wapi (BISH). – Tsuneki, 1979a:13 (in key), 1980b:10 (in key), 103 (Philippines; additional description), 1981d:78 (Hong Kong).

**268. *longicorne* Tsuneki**

*Trypoxylon longicorne* Tsuneki, 1977h:18, 20, ♀. Holotype: ♀, Papua New Guinea: Astrolabe Bay: Erima (TMB). – Tsuneki, 1981a:7 (in key), 56 (New Guinea; additional description; ♂), 1981f:48 (member of *apicatum* species group).

**269. *longipes* Tsuneki**

*Trypoxylon longipes* Tsuneki, 1979a:42, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:5 (in key).

**270. *longipilosum* Tsuneki**

*Trypoxylon longipilosum* Tsuneki, 1979a:77, ♀. Holotype: ♀, India: Madras: Anamalai Hills: Kadamparai (BMNH). – Tsuneki, 1979a:10 (in key).

**271. *longiscute* Tsuneki**

*Trypoxylon longiscute* Tsuneki, 1978a:85, ♀ (as *longiscutis*, incorrect original termination). Holotype: ♀, Madagascar in original description, corrected to Makassar in Errata (BMNH). – Tsuneki, 1978a:5 (in key), 86 (relationships to other species), 1980a:16 (citation).

**272. *lucidipes* Tsuneki**

*Trypoxylon naviforme lucidipes* Tsuneki, 1980a:17, ♀. Holotype: ♀, Sarawak: Semongoh Forest Research Station, 1°25'N, 110°17'E (BMNH). – Tsuneki, 1980a:4 (in key). – As *Trypoxylon lucidipes*: Tsuneki, 1981d:4 (new status).

**273. *lucidum* Arnold**

*Trypoxylon lucidum* Arnold, 1959:317, ♂. Holotype: ♂, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:95 (in key), 121 (revision; Burundi, Zaire); R. Bohart and Menke, 1976:347 (listed).

**274. *lumpurensis* Tsuneki**

*Trypoxylon lumpurensis* Tsuneki, 1979a:161, ♀. Holotype: ♀, Malaya: Kuala Lumpur (BMNH). – Tsuneki, 1979a:15, 16 (in key), 1980a:9, 13 (in key), 70 (Borneo; additional description; ♂), 1981f:33 (single member of *lumpurensis* species group).

**275. *lusingum* Leclercq**

*Trypoxylon lusingum* Leclercq, 1965a:117, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:93 (in key); R. Bohart and Menke, 1976:347 (listed); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains);.

**276. *luteocollare* Tsuneki**

*Trypoxylon luteocollare* Tsuneki, 1980b:73, ♂, ♀. Holotype: ♂, Philippines: Mindanao: Butuan (USNM). – Tsuneki, 1980b:8 (in key), 1981f:52 (single member of *luteocollare* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**277. *luteosignatum* Arnold**

*Trypoxylon luteosignatum* Arnold, 1945:11, ♂, ♀. Syntypes: Madagascar: Behara and Bekily (MNHN). – Leclercq, 1960a:99 (Madagascar); R. Bohart and Menke, 1976:347 (listed); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntype in Bulawayo Museum); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

**278. *luzonense* Tsuneki**

*Trypoxylon luzonense* Tsuneki, 1980b:47, ♂, ♀. Holotype: ♂, Philippines: Luzon: Baguio: Mines View Park (K. Tsuneki coll.). – Tsuneki, 1981f:35 (member of *varipes* species group); Tano, 1995:45 (holotype in K. Tsuneki collection).

**ssp. *nigrum* Tsuneki**

*Trypoxylon luzonense nigrum* Tsuneki, 1980b:50, ♀. Holotype: ♀, Philippines: Mindanao: Zamboanga del Norte: Masawan-Gundawan (BISH).

**279. *maai* Tsuneki**

*Trypoxylon maai* Tsuneki, 1979a:33, ♂. Holotype: ♂, Malaya: Pahang, King George V National Park, Kuala Trangan (BISH). – Tsuneki, 1979a:4 (in key), 1981f:27 (single member of *maai* species group).

**280. *mabwense* Leclercq**

*Trypoxylon mabwense* Leclercq, 1965a:116, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:92 (in key); R. Bohart and Menke, 1976:347 (listed).

**281. *maculipes* Tsuneki**

*Trypoxylon maculipes* Tsuneki, 1979a:25, ♀, ♂. Holotype: ♂, Laos: Wapikhamthong Province: Wapi (BISH). – Tsuneki, 1979a:3, 4 (in key), 1981f:27 (single member of *maculipes* species group).

**282. *maculiventris* Tsuneki**

*Trypoxylon maculiventris* Tsuneki, 1979a:73, ♀, ♂. Holotype: ♀, Malaya: Penang: Batu Feringgi, Catchment area (BMNH). – Tsuneki, 1979a:9, 10 (in key), nec Tsuneki, 1979c:6 and 29 (= *Trypoxylon cavum*), 1980a:7 (in key),

44 (Sarawak; additional description), 1981d:64 (Sarawak), 28 (in key), 1981f:54 (single member of *maculiventre* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

**ssp. sayabouryicum Tsuneki**

*Trypoxylon maculiventre sayabouryicum* Tsuneki, 1979a:75, ♀. Holotype: ♀, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:9 (in key).

**283. mafuluense Tsuneki**

*Trypoxylon mafuluense* Tsuneki, 1981a:40, ♀. Holotype: ♀, New Guinea: Mafulu (BMNH). – Tsuneki, 1981a:6 (in key).

**284. magrettii Gribodo**

*Trypoxylon magrettii* Gribodo, 1884:280, ♂ (as *Magrettii*, incorrect original capitalization). Holotype: ♂, Ethiopia: Metemma (Genova). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Kohl, 1906a:201 (a species with frontal shield, may be a synonym of *scutigera* Taschenberg); Arnold, 1924:26 (original description copied); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:347 (listed).

**285. maidli Richards**

*Trypoxylon maidli* Richards, 1934:285, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém (NHMW). – Richards, 1936b:458 (Trinidad, variation); R. Bohart and Menke, 1976:347 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies), Buys, 2003:447 (larva, nest, prey).

**ssp. bodkini Richards**

*Trypoxylon maidli* var. *bodkini* Richards, 1934:286, ♀, ♂. Holotype: ♀, Guyana: N.W. District (BMNH). – Vesey Fitzgerald, 1936:113 (Trinidad: gregarious nesting, nest structure, egg and pupa). – **As *Trypoxylon maidli bodkini***: R. Bohart and Menke, 1976:347 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**286. makassarensis Tsuneki**

*Trypoxylon makassarensis* Tsuneki, 1980a:94, ♀. Holotype: ♀, Indonesia: Sulawesi: Makassar (BISH). – Tsuneki, 1980a:12 (in key).

**287. makiling Tsuneki**

*Trypoxylon makiling* Tsuneki, 1980b:29, ♀. Holotype: ♀, Philippines: Luzon: Mt. Makiling (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM).

**288. malaisei Gussakovskij**

*Trypoxylon malaisei* Gussakovskij, 1932:10, ♀. Syntypes: ♀, Russia: Primorskiy Krai: Sutshan, Sedanka near Vladivostok, and Tigrovaya (Stockholm). – Gussakovskij, 1936:653 (revision), 1938:4 (China: Kiangsu Province); Tsuneki, 1956g:4, 7 (in key), 14 (redescription); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1967g:44 (Taiwan); Haneda, 1968a:44 (Japan); Tano, 1968:32 (Japan); Tsuneki, 1970d:11, 17 (life history), 1970b:9 (central Japan); T. Iida, 1969a:275 (description of mature larva); Suda, 1972b:39 (Japan), 1973:121 (Japan: Yamanashi Prefecture); Tsuneki, 1973e:33, 36 (in key); Nambu, 1973d:150 (Japan: Saitama Prefecture); Tsuneki, 1973v:150 (...); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:31 (paralectotype of *Trypoxylon obsonator*); Kazenas, 1980e:90 (Russia: Primorskiy Krai); Tsuneki, 1981d:53 (ne. Burma: Kambaiti), 63 (in key), 1981e:7, 8 (in key), 73 (Japan; additional description), 1981f:77 (single member of *malaisei* species group), 1982b:16 (known from Korea); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Miyatake, 1996:102 (specimens in Hiroshi Aoki collection); Oku and Nishida, 1999:169 (factors affecting female-biased sex ratio), 2001:550 (30% of nests produced females only, 50% of nests

produced males only); Yamane, Ikudome, and Terayama, 1999:526 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden); Nemkov, 2006b:167 (Russia: Primorskiy Krai: Kedrovaya Pad' Nature Reserve).

**ssp. arakanum Tsuneki**

*Trypoxylon malaisei arakanum* Tsuneki, 1981d:55, ♀. Holotype: ♀, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:62 (in key).

**289. malaiseiellum Tsuneki**

*Trypoxylon malaiseiellum* Tsuneki, 1981d:43, ♀. Holotype: ♀, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:62 (in key).

**290. malaitae Tsuneki**

*Trypoxylon malaitae* Tsuneki, 1981a:92, ♀. Holotype: ♀, Solomon Islands: Malaita Island: NW area: Dala (BISH). – Tsuneki, 1981a:7 (in key).

**291. malayanum Tsuneki**

*Trypoxylon malayanum* Tsuneki, 1979a:37, ♀. Holotype: ♀, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:5 (in key).

**292. mandibulatum Richards**

*Trypoxylon mandibulatum* Richards, 1933:214, ♀, ♂. Holotype: ♀, Sri Lanka: Colombo (BMNH). – Richards, 1934:340 (member of *mandibulatum* species group); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:42 (comparison with *Trypoxylon pygmaeum*), 73 (redescription), 76 (in key), 1979a:7 (in key), 53 (India; comments), 1979b:4 (in key), 10 (Sri Lanka), 1981d:7 (Sri Lanka), 24 (India), 19 (in key), 1981f:32 (member of *pygmaeum* species group).

**293. manni Richards**

*Trypoxylon manni* Richards, 1934:304, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém. Paratype: Trinidad. – Richards, 1936b:462 (corrections to original description); Vesey Fitzgerald, 1936:114 (Trinidad: nest structure); R. Bohart and Menke, 1976:347 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**294. marginatum Cameron**

*Trypoxylon marginatum* Cameron, 1912a:439, ♂. Holotype or syntypes: ♂, Guyana: Demerara: no specific locality (BMNH). – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**295. marginifrons Cameron**

*Trypoxylon marginifrons* Cameron, 1912b:399, ♀. Holotype: ♀, Zaire: Congo da Lemba (MRAC). – Arnold, 1924:25 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:93 (Zaire); Lecclercq, 1965a:90 (in key), 114 (revision; Zaire); R. Bohart and Menke, 1976:347 (listed); Antropov, 1993b:54 (Central African Republic).

**296. massaicum Cameron**

*Trypoxylon massaicum* Cameron, 1908a:290, ♀. Holotype or syntypes: ♀, Tanzania: Mt. Kilimanjaro: Kibonoto (NRS). – Arnold, 1924:25 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Lecclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:347 (listed).

**297. martium Tsuneki**

*Trypoxylon martium* Tsuneki, 1979a:111, ♀. Holotype: ♀, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:12 (in key).

**298. matheranicum Tsuneki**

*Trypoxylon matheranicum* Tsuneki, 1979a:126, ♀. Holotype: ♀, India: Matheran (BMNH). – Tsuneki, 1979a:14 (in key).

### 299. *mazaruni* Richards

*Trypoxylon mazaruni* Richards, 1934:308, ♀, ♂. Holotype: ♀, Guyana: Mazaruni River at Tutruva (Guyana Department of Agriculture). – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### 300. *medipolatum* Tsuneki

*Trypoxylon medipolatum* Tsuneki, 1979a:54, ♀. Holotype: ♀, Malaya: Perak: Larut Hills (BMNH). – Tsuneki, 1979a:7 (in key).

### 301. *medium* de Beaumont

*Trypoxylon figulus* var. *media* de Beaumont, 1945:477, ♀, ♂, incorrect original termination. Holotype: ♀, Switzerland: Martigny (Lausanne). – de Beaumont, 1951h:33 (Switzerland: Neuchâtel area; as *figulus* f. *media*); Blüthgen, 1951:234 (is a valid species); Leininger, 1953:17 (Germany: Baden-Württemberg, as *figulus* var. *media*); Grandi, 1954:238 (Italy; as *figulus* f. *media*), 1957:388 (Italy: Abruzzi; as *figulus* f. *media*); Zirngiebl, 1957:185 (Germany: Rheinland-Pfalz: Birkenheide); de Beaumont, 1958c:206 (Swiss National Park; as *figulus medium*), 1959a:30 (Italy; as *figulus* f. *media*); Wolf, 1959a:15, 16 (Germany; key; as *figulus medium*), 1959b:25 (Germany: Nassau); Hoop, 1961:66 (Germany: Schleswig-Holstein; as *figulus medius*); Grandi, 1962:96 (Italy; as *figulus* f. *medium*); de Beaumont, 1964c:84 (in Sphecidae Fauna of Switzerland, as *figulus* f. *media*), 1965a:56 (Greece; as *figulus* f. *media*), 1967a:338 (Turkey; as *figulus* f. *media*); Gauss, 1967:554 (Germany: Baden-Württemberg, as f. *media*); de Beaumont, 1969:92 (Turkey; as *figulus* forma *media*); Schmidt, 1971b:38 (Germany: Mainz area; as *figulus* f. *media*); Stritt, 1971a:104 (Germany: Baden-Württemberg: Karlsruhe; as *figulus media*); Simon Thomas, 1972:183 (France: Gironde, Lot-et-Garonne; as *figulus* f. *media*); R. Bohart and Menke, 1976:346 (listed, as *figulus medium*); Schwammberger, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve; as *figulus* form *media*). – **As *Trypoxylon medium***: Tsuneki, 1981e:19 (new status; additional description), 1981f:80 (member of *figulus* species group); Leclercq, 1982e:100 (Norway: Hedmark: Osen); Haack, Tschardtke, and Vidal, 1984:133 (Germany: Hamburg area); Lefeber, 1984:29 (Netherlands: Maastricht); Pulawski, 1984:136 (revision); Schmidt, 1984:295 (Federal Germany: Baden-Württemberg); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:97 (new to Romania: delta of Danube); Brechtel, 1986:62 (Germany: Südpfalz, as *Trypoxylon media*); Vikberg, 1986:76 (Finland); Haeseler, 1986b:668 (Federal Germany: Ipweiger Moor near Oldenburg); Schmidt and Westrich, 1987:366 (Federal Germany: Mainz area); Tyrner, 1987:232 (Czechoslovakia: Moravy); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Felton, 1988:221 (Great Britain: Kent County; population dynamics); Nilsson, 1988:98 (Sweden); Haeseler, 1988:211 (Federal Germany: Frisian Islands); Riemann, 1988:223 (Germany: Bremen area); Jacobs, 1989:15 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:131 (in key); Jacobs and Oehlke, 1990:173 (new records from Democratic Germany); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:541 (Austria: Kärnten); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Leclercq, 1991a:274 (correction to Leclercq's, 1979, catalog of French and Benelux Sphecidae: *medium* is the correct name); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve SE Koblenz); Nilsson, 1992:54 (Sweden); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:24 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Kuhlmann, 1993:76 (Germany: known from Westfalen); Luig, 1993:45 (Estonia); Negrisoló and Pagliano, 1993:95 (Italy: Sardegna); Felton and Schneider, 1994:290 (Luxemburg); Gathman, Greiler, and Tschardtke, 1994:10 (Germany: colonization of set-aside fields); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Schmid-Egger, Risch, and Niehuis,



1995:215 (summary of records from Germany: Rheinland-Pfalz Province); Skibińska, 1995:423, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Gusenleitner, 1996a:8 (Austria: Steiermark); Harvey and Plant, 1996:69 (Great Britain: summary of records from Essex); Jakubzik and Cölln, 1996b:401 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Shlyakhtenok, 1996:304 (Belarus: Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 111 (locality records); Woydak, 1996:45 (Germany: Westfalen: summary of distribution and life history); Schmid and Schmid-Egger, 1997:32 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); van der Smissen, 1998:70 (Germany: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Ljubomirov, 1999b:51 (Bulgaria: Mt. Vitoshka near Sofia); Luig and Voolma, 1999:179 (Estonia); Pauly, 1999:109 (in catalog of Belgian aculeates); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:254 (in Sphecidae Fauna of Germany); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Zettel, 2000:28 (Austria: Hundsheimer Kogel, Winden am See); Antropov *in* Bitsch et al., 2001:374 (in Sphecidae Fauna of Western Europe); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Schmid-Egger, 2001:17 (France: Alsace: Bollenbergs, erroneously listed under *Tachysphex*); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Shlyakhtenok and Skibińska, 2002:33 (Belarus: no specific locality); Steffan-Dewenter, 2002:634 (Germany: Göttingen area); Wiśniowski, 2002:70 (Poland: Ojców National Park); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Gayubo, Özbek, and Yildirim, 2003:91 (Turkey: Erzurum: Pasinler); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Harriersand Island near Bremen); Schmid-Egger, 2003:759 (Italy: Sicilia: Amenta, Armerina, Randazzo); von der Heide and Mettscher, 2003:103 (Germany: Niedersachsen: Emsland area); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Kazenas, 2004c:105 (Kazakhstan: western Tien Shan); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to Polish *Trypoxylon*); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005:453 (Bulgaria: Krasново and Zvechen near Hissarya); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

*Trypoxylon figulus minus* var. *rubi* Wolf, 1959a:15, ♂. Lectotype: ♂, Federal Germany: Plettenberg (coll. H. Wolf), designated by Pulawski, 1984:136. Synonymized with *Trypoxylon figulus* forme *media* by de Beaumont, 1964a:291.

As *Trypoxylon figulus minus*: Wolf, 1959:fig. c, corrected to *Trypoxylon figulus* forme *media* by de Beaumont, 1964a:291.

### 302. *megriense* Antropov

*Trypoxylon megriense* Antropov, 1985a:633, ♂. Holotype: ♂, Armenia: Megri (ZMMU). – Antropov, 1991b:681 (in revision of *attenuatum* group); Antropov *in* Bitsch et al., 2001:371 (in Sphecidae Fauna of Western Europe); Yildirim and Ljubomirov, 2005:1800 (Turkey: Elazığ: Halköy).

**303. *melanocorne* Strand**

*Trypoxylon melanocorne* Strand, 1922b:157, ♀, ♂ (♂ = *Trypoxylon taiwanum*). Syntypes: Taiwan: Kankau (now Hengchun), Tainan, Taiahorin, Taihorinsho (DEI). – Richards, 1934:315 (member of *figulus* species group); Tsuneki, 1966b:2, 3 (in key), 11 (discussion), 1967d:11 (Taiwan), 1971g:5 (Taiwan; discussion); Oehlke and Wudowenz, 1974:424 (syntypes in DEI); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1977c:7 (Taiwan), 1977j:272 (Taiwan), 1981c:9, 10 (in key), 44 (paratype of *Trypoxylon melanocorne* in BMNH actually is *Trypoxylon taiwanum*; Tsuneki, 1971, correctly interpreted *Trypoxylon melanocorne*), 50 (Taiwan; additional description), 1981f:64 (single member of *melanocorne* species group); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

**304. *melanurum* Cameron**

*Trypoxylon melanurum* Cameron, 1901d:54, ♂. Lectotype: ♂, India: Maldives Archipelago: Mahlos Atoll: Mamaduwari (BMNH), designated by Tsuneki, 1978b:46. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:338 (member of *scutatum* species group); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978a:6 (in key), 41 (redescription, ♀), 86 (relationships to other species), 1979a:19 (citation), 1979b:3 (in key), 5 (Sri Lanka), 1981d:18 (in key), 21 (India), 1981f:47 (member of *melanurum* species group).

*Trypoxylon nigricans* Cameron, 1889c:267 (nomen nudum; India: Barrackpore). Synonymized with *Trypoxylon pileatum* by Bingham, 1897:224, and with *Trypoxylon melanurum* by Tsuneki, 1978a:41 and 49. – W. Schulz, 1906:212 (not listed by Dalla Torre, 1897); Richards, 1934:338 (member of *scutatum* species group).

As *Trypoxylon piliatum* [sic]: Cameron, 1889c:119 (listed) and 122 (redescription), corrected to *Trypoxylon melanurum* by Tsuneki, 1978a:41 and 49.

**305. *membranaceum* Tsuneki**

*Trypoxylon membranaceum* Tsuneki, 1979a:121, ♀, ♂. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:13, 15, 17 (in key), 1979c:9, 11 (in key), 56 (Indonesia: Java, Sumatra), 1980a:12 (in key), 95 (Borneo; additional description), 1981d:30 (new to Sri Lanka), 1981f:65 (single member of *membranaceum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**306. *menkei* Tsuneki**

*Trypoxylon menkei* Tsuneki, 1979a:138, ♂. Holotype: ♂, Singapore (USNM). – Tsuneki, 1979a:15 (in key), 1981f:63 (single member of *menkei* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**307. *mico* Tsuneki**

*Trypoxylon mico* Tsuneki, 1979a:94, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:10 (in key).

**308. *mindanaonis* Tsuneki**

*Trypoxylon mindanaonis* Tsuneki, 1976b:84, ♀. Holotype: ♀, Philippines: Mindanao: Sapamoro (ZMK). – Tsuneki, 1980b:11 (in key), 105 (Philippines; additional description), 1981a:5 (in key), 21 (New Guinea), 1981b:100 (in key), 104 (Australia: Brisbane), 1981d:68 (Australia: Brisbane), 69 (Philippines: Mindanao), 80 (Hong Kong), 1981f:54 (member of *mindanaonis* species group); Cardale, 1985:265 (in catalog of Australian Sphecidae).

***ssp. bakerianum* Tsuneki**

*Trypoxylon bakerianum* Tsuneki, 1979a:135, ♀. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:13 (in key); Nuhn and Menke, 1994:25 (holotype in USNM) – As *Trypoxylon mindanaonis bakerianum*: Tsuneki, 1980a:2 and 72 (new status; key), 1980b:108 (Philippines; additional description).

**309. *miniovatum* Tsuneki**

*Trypoxylon miniovatum* Tsuneki, 1980a:83, ♀, ♂. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:10, 11, 13, 14 (in key), 1981f:56 (member of *errans* species group).

### 310. *minus* de Beaumont

*Trypoxylon figulus* var. *minor* de Beaumont, 1945:478, ♀, ♂, incorrect original termination. Holotype: ♀, Switzerland: Cologne near Genève (LAUSANNE). – de Beaumont, 1951h:33 (Switzerland: Neuchâtel area; as *figulus* f. *minor*); Blüthgen, 1951:234 (is a valid species); Leininger, 1953:18 (Germany: Baden-Württemberg, as *figulus* var. *minor*) Bischoff and Stadler, 1954:126 (Germany: Bayern: Romberg; as *figulus minor*); Grandi, 1954:238 (Italy; as *figulus* f. *minor*); Leclercq, 1956i:132 (Luxemburg); Grandi, 1957:388 (Italy: Abruzzi; as *figulus* f. *minor*); de Beaumont, 1959a:30 (Italy; as *figulus* f. *minor*); Wolf, 1959a:15 (Germany; key; as *figulus minus*), 1959b:25 (Germany: Nassau); Hoop, 1961:66 (Germany: Schleswig-Holstein: Steinfurth; as *figulus minus*); de Beaumont, 1964c:84 (in Sphecida Fauna of Switzerland, as *figulus* f. *minor*), 1967a:338 (Turkey; as *figulus* f. *minor*); Gauss, 1967:554 (Germany: Baden-Württemberg, as f. *minor*); Schmidt, 1971b:38 (Germany: Mainz area; as *figulus* f. *minor*), 1971c:74 (Germany: Schleswig-Holstein; as *figulus minor*); Kofler, 1972:108 (Austria: eastern Tirol; as *figulus* var. *minor*); R. Bohart and Menke, 1976:346 (listed, as *figulus minor*), 628 (is a synonym of *Trypoxylon figulus*); Schmidt, 1977:96 (Germany: Schwarzwald; as *figulus minor*); Schwammlinger, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve; as *figulus* form *minor*); Salzmann-Wandeler, 1998b:102 (Switzerland: Schwyz Canton: Gersau-Oberholz, as f. *minor*). – **As *Trypoxylon minus***: Leclercq, 1982e:100 (Norway: Nord-Trøndelag: Røra); Haack, Tschamtko, and Vidal, 1984:134 (Germany: Hamburg area); Lefebvre, 1984:29 (Netherlands: Maastricht, as *minor*); Pulawski, 1984:132 (revision); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Schmidt, 1984:295 (Federal Germany: Baden-Württemberg); Schmidt and Westrich, 1984:240 (Federal Germany: Rheinland-Pfalz: Bad Münster); Haeseler, 1985:351 (Federal Germany: Schleswig-Holstein), 355 (prey); Jacob-Remacle, 1985:408 (Belgium; second occupant in a composite nest); Lefebvre, 1985:87 (Netherlands: southern Limburg); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:62 (Germany: Südpfalz, as *Trypoxylon minor*); Jacob-Remacle, 1986:110 (Belgium; trap-nests); Gayubo and Sanza, 1986:55 (Spain: Burgos, Soria); Vikberg, 1986:76 (Finland); Riemann, 1987b:45 (Germany: Niedersachsen: Nature Reserve Voßberge); Schmidt and Westrich, 1987:366 (Federal Germany: Mainz area); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Tyrner, 1987:232 (Czechoslovakia: R. Bohemia); Felton, 1988:223 (new to Britain: Kent County: Sittingbourne); Jacobs, 1989:15 (Germany: Mecklenburg-Vorpommern); Pádr in Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Barbier, Rasmont, and Wahis, 1990:32 (Belgium: Hainaut); Jacobs and Oehlke, 1990:131 (in key), 173 (new records from Democratic Germany); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Rohe, 1990:1050 (Germany: Rheinland-Pfalz: Lenneberg forest); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Leclercq, 1991a:274 (correction to Leclercq's, 1979, catalog of French and Benelux Sphecidae: *minus* is the correct name); Schwammlinger and Priesner, 1990:541 (Austria: Kärnten); von der Heide and Witt, 1990:64 (Germany: Niedersachsen); Negrisoló, 1991:319 (Italy: Gorizia and Treviso Provinces); Nilsson, 1991:83 (Sweden: Lake Mälaren); N. Schneider, 1991:93 (Luxemburg), 108 (nest structure); Sorg and Wolf, 1991:195 (Germany: Koppelsein Reserve SE Koblenz); Colln and Jakubzik, 1992:87 (parasite: ichneumonid *Perithous divinator* Rossi), 89 (Germany: Rheinland; reared from twigs of *Rubus*); Nilsson, 1992:54 (Sweden); N. Schneider and Jacob-Remacle, 1992:44 (Luxemburg), 54 (nest structure); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:24 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Gorobchishin, 1993:47 (Ukraine: Kanev Nature Reserve); Kuhlmann, 1993:76 (Germany: known from Westfalen); Luig, 1993:44 (Estonia); Sorg and Wolf, 1993:61 (Germany: Rheinland-Westfalen: Nature Reserve Die Spey); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Gayubo and Borsato, 1994:210 (Italy: Veneto); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Tormos, Asís, and Gayubo, 1994:188, 211 (Spain: Albacete Province); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Negrisoló *in*

Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Schmid-Egger, Risch, and Niehuis, 1995:215 (summary of records from Germany: Rheinland-Pfalz Province); Shlyakhtenok, 1995:194 (Belarus: Berezinsky Nature Reserve); Skibińska, 1995:423, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Jakubzik and Cölln, 1996b:401 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:45 (Germany: Westfalen: summary of distribution and life history); Schmidt and Schmid-Egger, 1997:32 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Kuhlmann, 1998:71 (parasite: *Histiogaster* sp., an acarid), 73 (parasite: *Uroobovella flagelliger* (Berlese, 1910, an urodynychid acarid); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); van der Smissen, 1998:71 (Germany: Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Gusenleitner, 1999:599 (Austria: Vorarlberg: locality records); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Ljubomirov, 1999b:52 (Bulgaria: Mt. Vitosha near Sofia); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:179 (Estonia); Pauly, 1999:109 (in catalog of Belgian aculeates); Salzmänn-Wandeler and Rezbanyai-Reser, 1999:101 (Switzerland: Tessin: Monte Generoso); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:256 (in Sphecidae Fauna of Germany); González, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Wiśniowski, 2000:161 (Poland: Bieszczady Mts.); Antropov *in* Bitsch et al., 2001:374 (in Sphecidae Fauna of Western Europe); Cungs and Jakubzik, 2001:122, 123 (Luxemburg); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia, as *minor*); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Salzmänn-Wandeler and Rezbanyai-Reser, 2001:157 (Switzerland: Tessin Canton: Meride area); Schmid-Egger, 2001:17 (France: Alsace: Bollenbergs, erroneously listed under *Tachysphex*); Shlyakhtenok and Agunovich, 2001:144 (Belorussia: Berezinskiy Nature Reserve); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:33 (Belarus: no specific locality); Wiśniowski, 2002:70 (Poland: Ojców National Park); Ziska, 2002:9 (Germany: Berlin-Köpenick: Krumme Lake); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Flügel, 2003:9 (Germany: Hessen: Knüllwald); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Harriersand Island near Bremen); Kuhlmann and Quest, 2003:51 (Germany: Bayern: Bayerischer Wald National Park); Kula and Tyrner, 2003:204 (Northern Czech Republic: spruce stands in air-pollution region); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Schmid-Egger, 2003:759 (Italy: Sicilia: Milo); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Kazenas, 2004c:105 (Kazakhstan: western Tien Shan); Salzmänn-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières,

2004:98 (Luxemburg: Bon-Pays Region); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:95 (in key to Polish *Trypoxylon*); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005:453 (Bulgaria: Banderitsa in Pirin Mts., Sandanski); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Baugnée, 2003:64 (Belgium: Namur: Ri d'Hôwisse); Ljubomirov, 2006:54 (Bulgaria: Rhodope Mountains: previous records summarized); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

*Trypoxylon figulus koma* Tsuneki, 1956g:28, ♀, ♂. Holotype: ♀, Korea: Mt. Kodai (K. Tsuneki coll.). Synonymized with *Trypoxylon minus* by Pulawski, 1984:132. – Tsuneki, 1956g:5, 9 (in key).

### 311. *minutum* Tsuneki

*Trypoxylon minutum* Tsuneki, 1979a:67, ♀. Holotype: ♀, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:8 (in key).

### 312. *mishimaensis* Tsuneki

*Trypoxylon mishimaensis* Tsuneki, 1986:28, ♂. Holotype: ♂, Japan: Shizuoka Prefecture: Mishima (originally K. Tsuneki coll., now Hyogo Mus.).—Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.).

### 313. *mojuba* Amarante

*Trypoxylon mojuba* Amarante, 1995:157, ♀. Holotype: ♀, Brasil: Amazonas: Manaus: Fazenda Esteio at 2°24'S 59°44'W (Mus. Zool. Univ. São Paulo). – Amarante, 2002:48 (in catalog of Neotropical Crabronidae)

### 314. *moluccanum* Tsuneki

*Trypoxylon moluccanum* Tsuneki, 1980a:73, ♀. Holotype: ♀, Indonesia: South Moluccas: Ambon Island (RMNH). – Tsuneki, 1980a:10 (in key).

### 315. *montivagum* Arnold

*Trypoxylon montivagum* Arnold, 1940:102, ♀. Holotype: ♀, Zimbabwe: Vumbu Mts.: no specific locality (SAM). – Leclercq, 1965a:93 (in key), 118 (revision; Zaire); R. Bohart and Menke, 1976:347 (listed).

### 316. *moraballi* Richards

*Trypoxylon moraballi* Richards, 1934:313, ♀. Holotype: ♀, Guyana: Essequibo River at Moraballi Creek (BMNH). Paratype: Brazil. – Richards, 1934:346 (nest site and structure); Vesey Fitzgerald, 1936:114 (the type female emerged from the same nest as this of *cocorite*); R. Bohart and Menke, 1976:347 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

### *ssp. boliviense* Richards

*Trypoxylon moraballi* var. *boliviense* Richards, 1934:314, ♀. Holotype: ♀, Bolivia: Santa Cruz (NHMW). – **As *Trypoxylon moraballi boliviense***: R. Bohart and Menke, 1976:347 (new status, listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 317. *morobense* Tsuneki

*Trypoxylon morobense* Tsuneki, 1981a:59, ♀. Holotype: ♀, New Guinea: Morobe District: Wau (BISH). – Tsuneki, 1981a:8 (in key).

### 318. *mulusanum* Tsuneki

*Trypoxylon mulusanum* Tsuneki, 1980a:32, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:5, 6 (in key).

**319. mutilatum Richards**

*Trypoxylon mutilatum* Richards, 1934:296, ♀. Holotype: ♀, Bolivia: no specific locality (NHMW). – R. Bohart and Menke, 1976:347 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**320. myitkyinae Tsuneki**

*Trypoxylon myitkyinae* Tsuneki, 1981d:49, ♂. Holotype: ♂, n. Burma: Myitkyina (Stockholm). – Tsuneki, 1981d:62 (in key), 1981f:76 (single member of *myitkyinae* species group).

**321. nambui Tsuneki**

*Trypoxylon nambui* Tsuneki, 1966f:1, ♂, ♀. Holotype: ♂, Japan: Saitama Prefecture: Hodosan (originally K. Tsuneki coll., now USNM). – Haneda, 1968b:55 (Japan: Nagano Prefecture: Ina District), 1968:22 (Japan), 1972a:9 (nesting habits), 1973d:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 37 (in key); Nambu, 1975b:64; R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:4, 5 (in key), 32 (Japan; additional description), 1981f:37 (member of *pacificum* species group); Nuhn and Menke, 1994:26 (holotype transferred to USNM).

*Trypoxylon kinkadzanense* Tsuneki, 1971c:16, ♂. Holotype: ♂: Japan: Gifu: Mount Kinkadzan (Ent. Lab. Univ. Medijo, Nagoya). Synonymized with *Trypoxylon nambui* by Tsuneki, 1972b:19. – Tsuneki, 1973e:37 (in key).

**322. nasale Tsuneki**

*Trypoxylon nasutum* Tsuneki, 1979a:37, ♀, primary homonym of *Trypoxylon varipes nasutum* Tsuneki, 1974. Holotype: ♀, Malaya: Cameron's Highlands (BMNH). – Tsuneki, 1979a:5 (in key); Antropov, 1995c:125 (synonymy).

*Trypoxylon nasale* Tsuneki, 1980a:2. Substitute name for *Trypoxylon nasutum* Tsuneki, 1979.

323. *Trypoxylon minahime* Tsuneki, 1992c:54. Unnecessary Substitute name for *Trypoxylon nasutum* Tsuneki, 1979.

**324. nathani Tsuneki**

*Trypoxylon nathani* Tsuneki, 1979a:46, ♀. Holotype: ♀, India: Madras: Anamalai Hills: Cinchona (RMNH). – Tsuneki, 1979a:6 (in key).

**325. naviforme Tsuneki**

*Trypoxylon naviforme* Tsuneki, 1979c:14, ♀. Holotype: ♀, Indonesia: Java: Nongkodjadjar (BMNH). – Tsuneki, 1979c:4 (in key).

**326. nesianum Tsuneki**

*Trypoxylon nesianum* Tsuneki, 1979c:60, ♂, ♀. Holotype: ♂, Indonesia: West Java: Tjibarangbang Djasinga (RMNH). – Tsuneki, 1979c:10, 11 (in key), 1981f:65 (member of *vadyi* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

**327. ngum Tsuneki**

*Trypoxylon ngum* Tsuneki, 1979a:111, ♀. Holotype: ♀, Laos: Vientiane: Ban Van Eue (BISHOP). – Tsuneki, 1979a:13, 15 (in key), 1979c:9 (in key), 54 (Indonesia: North Sumatra), 1981f:69 (member of *tawitawiense* species group).

**328. nigricorne Tsuneki**

*Trypoxylon nigricorne* Tsuneki, 1979a:119, ♀. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:14 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**329. nigrifemur Tsuneki**

*Trypoxylon nigrifemur* Tsuneki, 1979a:87, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:11 (in key), 1981d:48 (Burma), 62 (in key).

**330. nigripes Tsuneki**

*Trypoxylon nigripes* Tsuneki, 1979a:132, ♀, ♂. Holotype: sex not indicated, India: Bombay (TMB). – Tsuneki, 1979a:13, 15 (in key), 1979b:5 (in key), 18 (Sri Lanka), 1981d:16 (Sri Lanka), 20 (in key), 1981f:54 (member of *mindanaonis* species group).

### 331. *nigrispine* Cameron

*Trypoxylon nigrispine* Cameron, 1905l:373, ♀ (as *niagrispinis*, incorrect original termination). Holotype or syntypes: ♀, Mexico: no specific locality (BMNH). – Richards, 1934:315 (revision); R. Bohart and Menke, 1976:347 (listed, as *nigrispine*); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 332. *nilgiriense* Tsuneki

*Trypoxylon nilgiriense* Tsuneki, 1979a:38, ♀, ♂. Holotype: ♀, India: Kerala: Nilgiri Hills: Gudalur (RMNH). – Tsuneki, 1979a:5 (in key), 1981d:22 (India), 1981f:31 (single member of *nilgiriense* species group).

### *ssp. shan* Tsuneki

*Trypoxylon nilgiriense shan* Tsuneki, 1981d:34, ♀. Holotype: ♀, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:61 (in key).

### 333. *nipponicum* Tsuneki

*Trypoxylon nipponicum* Tsuneki, 1956g:18, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Fudodo (originally K. Tsuneki coll., now Hyogo Mus.) – Tsuneki, 1956g:4, 8 (in key); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Haneda, 1968a:44 (Japan); Tano, 1968:32 (Japan); Haneda, 1970:12 (Japan: Akita Prefecture); Tsuneki, 1970b:9 (Central Japan); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tano, 1973b:77 (nest); Tsuneki, 1973...:15 (diagnostic characters), 1973e:33, 36 (in key), 1973v:150 (prey); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:7, 8 (in key), 70 (Japan; additional description), 1981f:57 (single member of *nipponicum* species group); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:21 (holotype transferred to Hyogo Mus.); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine).

### *ssp. puliense* Tsuneki

*Trypoxylon puliense* Tsuneki, 1967d:15, ♀. Holotype: ♀, Taiwan: Nantou Prefecture: Puli (originally K. Tsuneki coll., now USNM). – Haneda, 1971b:31 (Taiwan; as *puliensis*); Tsuneki, 1971g:8 (Taiwan); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981c:8, 10 (in key), 43 (Taiwan; additional description), 1981e:70 (Japan; additional description; synonym of *Trypoxylon nipponicum*). – **As *Trypoxylon nipponicum puliense***: Tsuneki, 1981e:73 (discussion); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon murotai* Tsuneki, 1973f:44, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Puli (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon puliense* by Tsuneki, 1981c:44. – Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:347 (listed); Nuhn and Menke, 1994:26 (holotype in USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

### 334. *nishidai* Tsuneki

*Trypoxylon nishidai* Tsuneki, 1979a:134, ♂. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:13, 15 (in key), 1981d:30 (India: Kerala), 1981f:54 (member of *mindanaonis* species group).

### 335. *nitidissimum* Richards

*Trypoxylon nitidissimum* Richards, 1934:301, ♂. Holotype: ♂, Brazil: Pará: Pará, now Belém (BMNH). Paratype: Bolivia. – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 336. *nodosicorne* R. Turner

*Trypoxylon nodosicornis* R. Turner, 1917:203, ♂, incorrect original termination. Holotype: ♂, India: Hazara District: Dungagali (BMNH). – As *Trypoxylon nodosicorne*: Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:62 (♀), 66 (study of holotype, redescription), 77 (in key), 1979a:7 (in key), 56 (India: Dungagali, Simla).

*Trypoxylon simlaense* Cameron (nomen nudum). – R. Turner, 1917:203 (cited); Richards, 1934:315 (member of *figulus* species group); Tsuneki, 1978b:61 (discussion of the name *simlaense*), 1981f:19 (member of *nodosicorne* species group).

### 337. *nodosum* Arnold

*Trypoxylon chirindensis* Arnold race *nodosum* Arnold, 1944:18, ♀. Holotype: ♀, Zimbabwe: Vumba Mts. (SAM). – As *Trypoxylon nodosum*: Arnold, 1946:70 (new status); Leclercq, 1965a:91 (in key), 115 (revision; Zaire); R. Bohart and Menke, 1976:347.

### 338. *novaguineae* Tsuneki

*Trypoxylon novaguineae* Tsuneki, 1981a:80, ♀. Holotype: ♀, New Guinea: Morobe Province: Markham River Valley: Nadzhab (USNM). – Tsuneki, 1981a:9 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

### 339. *obiense* Tsuneki

*Trypoxylon obiense* Tsuneki, 1980a:96, ♀. Holotype: ♀, Indonesia: Obi Island: Kali Telaga (RMNH). – Tsuneki, 1980a:12 (in key).

### 340. *oculare* Menke

*Trypoxylon oculare* Menke, 1968b:312, ♀. Holotype: ♀, Brazil: Pará: Santarém (UCD). – R. Bohart and Menke, 1976:347 (listed; Brazil, Peru); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 341. *okinawanum* Tsuneki

*Trypoxylon koshunicon okinawanum* Tsuneki, 1966b:18, ♀. Holotype: ♀, Ryukyu Islands: Ishigaki Island: Kara-yama (BISH). – Tsuneki, 1966b:3 (in key). – As *Trypoxylon okinawanum*: Tsuneki, 1971g:14 (new status), 1973e:34 (in key); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981c:4, 6 (in key), 19 (Taiwan; additional description), 1981e:4 (in key), 38 (Ryukyu Islands: Ishigaki Island), 1982g:62 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Yamane, Ikudome, and Terayama, 1999:528 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan).

### 342. *olthofi* Tsuneki

*Trypoxylon olthofi* Tsuneki, 1981a:38, ♀. Holotype: ♀, New Guinea: Bernhard Camp (RMNH). – Tsuneki, 1981a:6 (in key).

### 343. *operculum* Tsuneki

*Trypoxylon operculum* Tsuneki, 1979a:117, ♀. Holotype: ♀, India: Madras: Anamalai Hills: Cinchona (RMNH). – Tsuneki, 1979a:13 (in key).

### 344. *ordinarium* Richards

*Trypoxylon ordinarium* Richards, 1934:316, ♀. Holotype: ♀, Brazil: no specific locality (NHMW). – R. Bohart and Menke, 1976:347 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 345. *orientale* Cameron

*Trypoxylon placidum* Cameron, 1904d:216, ♀, ♂, junior primary homonym of *Trypoxylon placidum* F. Smith, 1864. Lectotype: ♂, India: Assam: Khasia Hills (OXUM), designated by Tsuneki, 1978b:51. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1947:53 (Burma: Rangoon, comparison with *Trypoxylon intrudens*); Tsuneki, 1978b:78 and 79 (in key).



*Trypoxylon orientale* Cameron, 1904d:218, ♀. Lectotype: ♀, India: Assam: Khasia Hills (OXUM), designated by Tsuneki, 1978b:56. Synonymized with *Trypoxylon placidum* Cameron by Tsuneki, 1978b:51 and 52. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:56 (redescription), 1979a:14, 18 (in key), 128 (India, Nepal, Malaya; redescription), 1979c:56 (n. India; Indonesia: Java), 1981d:58 (Burma), 63 (in key), 76 (China: Szechuan; additional description), 1981f:71 (single member of *orientale* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon montanum* W. Schulz, 1906:212. Substitute name for *Trypoxylon placidum* Cameron, 1904. – Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:347 (listed).

#### **ssp. *ardjuno* Tsuneki**

*Trypoxylon orientale ardjuno* Tsuneki, 1979c:56, ♀. Holotype: Mt. Ardjuno: Soemoer Brantas (RMNH). – Tsuneki, 1979c:10 (in key).

#### **ssp. *gedeh* Tsuneki**

*Trypoxylon orientale gedeh* Tsuneki, 1979c:56, ♀. Holotype: ♀, Indonesia: West Java: Mt. Gedeh: Sitoenoegoeng (RMNH). – Tsuneki, 1979c:9 (in key).

#### **ssp. *keralense* Tsuneki**

*Trypoxylon orientale keralense* Tsuneki, 1979a:130, ♀. Holotype: ♀, India: Kerala: Nilgiri Hills (RMNH).

#### **346. *orientinum* Richards**

*Trypoxylon orientinum* Richards, 1969:123, ♀, ♂. Holotype: ♀, Cuba: Oriente: Cuabitas (Acad. Cienc. Cuba). – Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:347 (listed); Reyes and Hernández, 1995:3 (holotype in Inst. Ecol. Sist., La Havana, Cuba); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Portuendo and Fernández, 2004:135 (Cuba: Sierra Maestra and Nipe-Sagua-Baracoa mountains); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae; also: first record from Jamaica, first record from Hispaniola, first record from Mona Island).

#### **347. *oriomonis* Tsuneki**

*Trypoxylon oriomonis* Tsuneki, 1981a:43, ♀. Holotype: ♀, Papua New Guinea: Western District: Oriomo Government Station (BISH). – Tsuneki, 1981a:5 (in key).

#### **348. *ornatigaster* Tsuneki**

*Trypoxylon ornatigaster* Tsuneki, 1979a:105, ♀. Holotype: ♀, Malaya: Pahang: Frazer's Hills (BMNH). – Tsuneki, 1979a:12 (in key), 1979c:8 (in key), 50 (Indonesia: Sumatra), 1980a:7 (in key), 56 (Borneo; additional description), 1981d:65 (Sarawak), 1981f:71 (single member of *ornatigaster* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

#### **349. *outang* Tsuneki**

*Trypoxylon outang* Tsuneki, 1980a:107, ♀. Holotype: ♀, North Borneo: Sandakan (USNM). – Tsuneki, 1980a:11, 14 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

#### **350. *owrichardsi* Tsuneki**

*Trypoxylon owrichardsi* Tsuneki, 1981a:19, ♀. Holotype: ♀, New Guinea: Morobe District: Wau (BMNH). – Tsuneki, 1981a:4 (in key).

#### **351. *pachygaster* Richards**

*Trypoxylon pachygaster* Richards, 1934:289, ♂. Holotype: ♂, Trinidad: no specific locality (BMNH). – Richards, 1934:347 (cocoon), 1936b:458 (♀), 462 (corrections to original description); Vesey Fitzgerald, 1936:113 (Trini-

dad: nest); R. Bohart and Menke, 1976:347 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

### 352. *pacificum* Gussakovskij

*Trypoxylon pacificum* Gussakovskij, 1932:12, ♀, ♂. Syntypes: Russia: Primorskiy Kray: Tigrovaya, Sedanka, Putyatin's Island (Stockholm). – Gussakovskij, 1936:665 (redescription); Tsuneki, 1956g:6, 7, 11 (in key), 33 (redescription); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tsuneki, 1964c:10 (Japan: Kyushu); Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1967g:44 (w. Japan: Mt. Hyonoson), 1968l:50 (Korea: Quelquepart Island); Haneda, 1969:68 (Japan: Yamanashi Prefecture); Tsuneki, 1969e:25 (Japan), 1969i:59 (Japan: Fukui Prefecture: Taichôdzi temple), 1970b:9 (central Japan); Nambu, 1972d:6 (list of spider prey), 1973d:151 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tsuneki, 1973e:35, 37 (in key); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Kazenas, 1980e:90 (Russia: Primorskiy Kray); Tsuneki, 1981d:86 (Russia: Primorskiy Kray: Okeanskaya), 1981e:5 (in key), 45 (redescription of syntypes and of Japanese population), 1981f:37 (member of *pacificum* species group), 1982b:16 (known from Korea); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:420, 421 (in key to Sphecidae of Russian Far East); Miyatake, 1996:102 (specimens in Hiroshi Aoki collection); Ohl and Linde, 2003:151 (number of ovarioles); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden); Nemkov, 2006b:168 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve).

### 353. *paeninsulicola* Tsuneki

*Trypoxylon paeninsulicola* Tsuneki, 1979a:96, ♀. Holotype: ♀, Malaya: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:11 (in key).

### 354. *pagdeni* Tsuneki

*Trypoxylon pagdeni* Tsuneki, 1979a:51, ♀. Holotype: ♀, Malaya: Pahang: Tanah, Rata (BMNH). – Tsuneki, 1979a:6 (in key).

### 355. *paglianoi* Antropov

*Trypoxylon paglianoi* Antropov, 1991b:679, ♀, ♂. Holotype: ♂, Algeria: Petite Kabylie: "F. t de Guerrouch" (G. Pagliano coll.). Paratype: Tunisia.

### 356. *pahangense* Tsuneki

*Trypoxylon pahangense* Tsuneki, 1979a:51, ♀. Holotype: ♀, Malaya: Pahang: Cameron's Highlands (BMNH). – Tsuneki, 1979a:6 (in key), 1981d:26 (Malaysia: Pahang), 38 (in key).

### 357. *palawanum* Tsuneki

*Trypoxylon palawanum* Tsuneki, 1976b:90, ♀. Holotype: ♀, Philippines: Palawan: Pinigisan (ZMK). – Tsuneki, 1980b:6 (in key), 41 (Philippines; additional description).

### 358. *pan* Arnold

*Trypoxylon pan* Arnold, 1956:74, ♀. Holotype: ♀, Zimbabwe: Chirinda Forest (SAM). – Leclercq, 1965a:99 (in key), 127 (revision); R. Bohart and Menke, 1976:347 (listed).

### 359. *panitianum* Tsuneki

*Trypoxylon panitianum* Tsuneki, 1980b:27, ♂. Holotype: ♂, Philippines: Palawan Island: Panitian (BISH). – Tsuneki, 1980b:5 (in key), 1981f:43 (member of *flavipes* species group).

### 360. *papa* Antropov

*Trypoxylon papa* Antropov, 1995c:132, ♀. Holotype: ♀, Indonesia: Sulawesi: Dumoga Bone National Park (RMNH).

### 361. *papuanum* Tsuneki

*Trypoxylon papuanum* Tsuneki, 1977h:2, ♀. Holotype: ♀, New Guinea: Huon Golf: Simbang (TMB). – Tsuneki, 1978a:7 (in key), 12 (redescription; Australia, Solomon Islands, New Guinea, Philippine Islands), 86 (relationships to other species), 1981a:4 (in key), 19 (New Guinea, Solomon Islands), 1981b:100 (in key), 101 (Australia), 1981f:47 (member of *scutatatum* species group); Cardale, 1985:265 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

### 362. *parvulum* Tsuneki

*Trypoxylon parvulum* Tsuneki, 1979a:62, ♂. Holotype: ♂, Malaya: Taiping Hill (BMNH). – Tsuneki, 1979a:8 (in key), 1981f:37 (member of *pacificum* species group).

### 363. *parvum* Schrottky

*Trypoxylon parvum* Schrottky, 1902b:114, ♀, ♂. Syntypes: Argentina: Buenos Aires (depository?). – Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay), 1913a:228 (Argentina: Buenos Aires); Richards, 1934:286 (possibly the valid name for *Trypoxylon maidli*); R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 364. *patruelle* Arnold

*Trypoxylon patruelis* Arnold, 1924:20, ♀, incorrect original termination. Holotype: ♀, South Africa: Cape Province: Willomwore (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:93 (in key), 118 (citation). – *As Trypoxylon patruelle*: R. Bohart and Menke, 1976:347 (listed).

### 365. *paulisum* Leclercq

*Trypoxylon paulisum* Leclercq, 1965a:102, ♀. Holotype: ♀, Zaire: Haut-Uele: Paulis (MRAC). – Leclercq, 1965a:83 (in key); R. Bohart and Menke, 1976:347 (listed).

### 366. *paulum* Tsuneki

*Trypoxylon paulum* Tsuneki, 1980a:33, ♂. Holotype: ♂, Sarawak: Semongoh Forest Research Station, 1°25'N, 110°17'E (BMNH). – Tsuneki, 1980a:6 (in key) (single member of *paulum* species group).

### 367. *peltopse* Kohl

*Trypoxylon peltopse* Kohl, 1906a:201, ♀ (as *peltopsis*, incorrect original termination). Syntypes: ♀, Brazil: Rio Grande do Sul: Rio Grande do Sul (NHMW). – Richards, 1934:332 (revision); R. Bohart and Menke, 1976:347 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 368. *pendleburyi* Tsuneki

*Trypoxylon pendleburyi* Tsuneki, 1979a:36, ♀. Holotype: ♀, Malaya: Pahang: Cameron's Highland (BMNH). – Tsuneki, 1979a:5 (in key); Antropov, 1995c:125 (description of ♂, Nepal).

### 369. *pennsylvanicum* de Saussure

*Trypoxylon pennsylvanicum* de Saussure, 1867:82, ♀. Holotype or syntypes: USA: Pennsylvania: no specific locality (NHMW or MHNG). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); W. Fox, 1891c:148 (unidentified species), 1894a:476 (original description copied); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:314 (not examined); Sandhouse, 1940:159 (revision); Brimley, 1942:36 (North Carolina: Raleigh); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1952b:177 (USA: West Virginia: Lost River State Park); Krombein and Evans, 1954:233 (Florida: Arcadia); Krombein, 1961b:64 (prey: an araneid), 1963f:274 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:347 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Tsuneki, 1979a:58 (comparison with *fronticorne*); Finnamore, 1982:117 (in Sphecid Fauna of Southern Quebec); Coville, 1990:2 (may be a complex of species);

Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); nec Blades and Marshall, 1994:276 (= *Trypoxylon attenuatum*); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Sugar et al., 1998:15 (Canada: southern Ontario); Skevington et al., 2001:128 (Canada: Ontario: Lambton County); Antropov, 2003:438 (in key to North American species of *figulus* group); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Giles and Ascher, 2006:231 (New York: Black Rock Forest Preserve).

### 370. *pentheri* Richards

*Trypoxylon pentheri* Richards, 1934:322, ♀. Holotype: ♀, Brazil: Joazeiro (NHMW). – R. Bohart and Menke, 1976:347 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

### 371. *petiolatum* F. Smith

*Trypoxylon petiolatum* F. Smith, 1858a:105, ♀. Lectotype: ♀, Malaysia: Sarawak (OXUM), designated by Tsuneki, 1978b:6. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (listed); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Cameron, 1904b:119 (Singapore), 1905k:64 (Java); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:6 (as synonym of *Trypoxylon bicolor*), 1979a:15, 16 (in key), 152 (resurrected from synonymy), 160 (Singapore, Malaya, Thailand, Vietnam, Laos, s. China, Nepal, Maldive Islands; junior synonyms), 1979c:7, 10 (in key), 39 (Indonesia: Flores, Java, Simalur; taxonomy), 1980a:11, 14 (in key), 110 (Indonesia: Ambon, Binongko, Sulawesi, Sarawak, Borneo; discuss.), 1980b:9 (in key), 82 (Philippines; additional description), 1981a:8, 9 (in key), 75 (Ogasawara and Chichidzima Islands, Hawaii), 1981c:7 (in key), 30 (Taiwan; additional description; Taiwanese specimens are intermediate between nominate subspecies and ssp. *obsonator*), 1981d:29 (India, Malaysia, Singapore, Java; additional description), 45 (Burma), 62 (in key), 67 (Brunei, Sulawesi), 73 (China), 77 (Hong Kong), 1981e:6 (in key), 63 (Japan; additional description), 1981f:75 (member of *bicolor* species group), 1982b:16 (known from Korea), 1982d:11 (Taiwan), 1982g:61 (known from the Ryukyu archipelago); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Tsuneki, 1984a:11 (known from Ogasawara = Bonin Islands), 1986:30 (known from the Ryukyu archipelago); Hoshiba and Imai, 1993:467 (chromosome number  $n = 14$ ); Takahashi 1993:3 (Japan: Hachijo-Jima Island); Wu and Zhou, 1996:104 (revision in Economic Insect Fauna of China); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Miyano and Yamaguchi, 2001:244 (reduction of nest building activities by ants); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon rejector* F. Smith, 1870:189, ♀. Holotype or syntypes: ♀, India: North-West Provinces, now Uttar Pradesh: Mainpuri (lost?). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:30 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Horne, 1870:164 (life history); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (listed, Horne's observations reported); Bingham, 1897:226 (original description copied); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:344 (life history summary); R. Bohart and Menke, 1976:347 (listed).

*Trypoxylon obsonator* F. Smith, 1873a:194, ♀, ♂. Syntypes: Japan: Hyogo (BMNH). Synonymized with *Trypoxylon petiolatum* by Tsuneki, 1981e:65 (not recognized as subspecies). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Yasumatsu, 1929:107 (life history); Richards, 1934:315 (member of *figulus* species group); Gussakovskij, 1936:652 (original description copied); Ma, 1936b:67 (nesting habits); Tsuneki, 1956g:4, 9 (in key), 12 (redescription), 1962a:5 (Ryukyus Islands: Amami Oshima Islands); Iwata, 1963:116 (nest parasitized by *Melittobia*); Prefecture); Nambu, 1966:25-34 (nesting habits); Tsuneki, 1966b:2, 3 (in key), 10 (Taiwan; redescription); Nambu, 1967:6-16 (nesting habits); Tsuneki, 1967d:10 (Taiwan), 1968d:55 (Ryukyus), 1968l:50 (Korea: Quelquepart Island), 1969e:25 (Japan), 1970d:13 (life history); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:5 (Taiwan); Yamada, 1971:35 (Japan: Aichi Prefecture); Haneda, 1972a:4 (Taiwan); Tano, 1972:24 (Japan: Ryukyus Islands); Haneda, 1973:30 (Japan: Bonin Islands: Chichijimas Islands); Murota, 1973a:101 (Ryukyus Islands: Amami group); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tsuneki, 1973e:32 (in key); Nambu, 1973d:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:35 (in key); Nambu, 1975b:63

- (Japan: Saitama Prefecture); Tsuneki, 1977j:271 (Taiwan); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan). – **As *Trypoxylon bicolor obsonator***: Tsuneki, 1978b:31 (syntypes examined and re-described, but lectotype not designated; new status); Hoshiba and Imai, 1993:467 (chromosome number  $2n = 28$ ). – **As *Trypoxylon petiolatum obsonator***: Tsuneki, 1979a:160 (new combination).
- Trypoxylon accumulator* F. Smith, 1875:38, ♀. Lectotype: ♀, India (OXUM), designated by Tsuneki, 1978b:32, latter synonymy denied and synonymized with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Cameron, 1889c:120 (redescription).
- Trypoxylon javanum* Taschenberg, 1875:378, ♂. Holotype: ♂, Indonesia: Java: no specific locality (Halle). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:41, latter synonymy denied and synonymized with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (listed); Dalla Torre, 1897:706 (in catalog of world Hymenoptera).
- Trypoxylon tinctipenne* Cameron, 1889c:121, "♀", actually ♀, ♂. Lectotype: ♂, India: West Bengal: Barrackpore 20 km N Calcutta (OXUM), designated by Tsuneki, 1978b:37. Synonymized with *Trypoxylon bicolor* by Bingham, 1897:227 (synonymy confirmed by Tsuneki, 1978b:36), and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Dalla Torre, 1897:709 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:348 (listed).
- Trypoxylon tricolor* Sickmann, 1894:209, ♀. Holotype or syntypes: ♀, China, Hopei Province: Tientsin (Münster). Synonymized with *Trypoxylon petiolatum* by Tsuneki, 1981e:63. – Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Gussakovskij, 1936:651 (redescription); Tsuneki, 1956g:4, 9 (in key), 14 (redescription), 1971m:12 (China: Peking: Sietang); R. Bohart and Menke, 1976:348 (listed).
- Trypoxylon cognatum* Cameron, 1897:26, ♀. Holotype: ♀, India: Himalaya (OXUM). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:40, and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160.
- Trypoxylon erythrozonatum* Cameron, 1901:54, ♀. Lectotype: ♀, Maldives Islands (BMNH), designated by Tsuneki, 1978b:46. Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:45, and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160.
- Trypoxylon responsum* Nurse, 1903a:518, ♀. Syntypes: India: Radjasthan: Mount Abu (BMNH). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:66 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Tsuneki, 1967d:6 (Taiwan; also as *responsum responsum*); R. Bohart and Menke, 1976:347 (listed).
- Trypoxylon obsonator tropicale* Tsuneki, 1961b:383, ♀, ♂. Holotype: ♂, Thailand: Chiang Mai (Osaka). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:31 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Tsuneki, 1963c:12 (Thailand), 1974b:630 (Thailand), 1976b:75 (Philippines; redescription).

### 372. *petioloides* Strand

- Trypoxylon gracilescens* Smith var. *petioloides* Strand, 1922b:150, ♀, ♂. Lectotype: ♀, Taiwan: Kankau, now Hengchun (DEI), designated by Oehlke and Wudowenz, 1974:424. – **As *Trypoxylon petioloides***: Yasumatsu, 1938a:74 (Botel Tobago, now Lang Hsu Island SE Taiwan); R. Bohart and Menke, 1976:347 (as synonym of *Trypoxylon gracilescens*); Tsuneki, 1981c:8, 10 (in key), 40 (Taiwan; new status; redescription); Yamane, Ikudome, and Tera-yama, 1999:526 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan).
- As *Trypoxylon gracilescens* (corrected to *Trypoxylon petioloides* by Tsuneki, 1981c:40): Tsuneki, 1966b:2, 3 (in key), 10 (Taiwan; redescription), 1967d:9 (Taiwan), 1968d:55 (Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:4 (Taiwan); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); Tsuneki, 1977j:272 (Taiwan).

### *ssp. isigakiense* Tsuneki

- Trypoxylon isigakiense* Tsuneki, 1973a:11, ♀. Holotype: ♀, Ryukyus Islands: Ishigaki Island: Mt. Omoto (T. Nambu coll.). – Tsuneki, 1973e:32, 35 (in key). – **As *Trypoxylon petioloides isigakiense***: Tsuneki, 1981c:8, 10 (in key), 42 (Taiwan; new status; additional description), 1981e:7 (in key), 70 (Japan; additional description), 1982f:48 (Ryukyu Islands: Ishigaki Island), 1982g:61 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); as *isigakiense*).

**373. *pileatum* F. Smith**

*Trypoxylon pileatum* F. Smith, 1856:377, ♀. Holotype: ♀, India: Madras (BMNH or OXUM). – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); nec Cameron, 1889c:119 and 122 (= *Trypoxylon melanurum*); Bingham, 1896a:441 (Sri Lanka: Pundaluoya), 1897:222 (redescription); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Kohl, 1906a:200 (a species with frontal shield); Dutt, 1912:200 (nesting); Lefroy, 1909:202 (nesting); Richards, 1934:338 (member of *scutatum* species group), 344 (life history summary); Begum and Bose, 1976:26 (Bangladesh: Dakka); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978a:6 (in key), 8 (redescription), 1979a:19 (citation), 1979b:3 (in key), 6 (Sri Lanka), 1981d:2 (Sri Lanka; additional description), 18 (in key), 1981f:47 (member of *scutatum* species group); Pu, 1986:8 (China); Begum, Khan, and Bose, 1995:176 (Bangladesh: Dhaka University Campus); S. Gupta, 1995:86 (India: Uttar Pradesh); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**374. *pilosum* Tsuneki**

*Trypoxylon pilosum* Tsuneki, 1979a:97, ♀. Holotype: ♀, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:9, 10 (in key).

**375. *pinguiceps* Tsuneki**

*Trypoxylon pinguiceps* Tsuneki, 1977h:12, ♀. Holotype: ♀, Bismarck Islands: Lavongai: Banatam (ZMK). – Tsuneki, 1981a:4 (in key), 14 (additional description), 1982a:46 (Bismarck Archipelago.).

**376. *placidum* F. Smith**

*Trypoxylon placidum* F. Smith, 1863a:35, ♀. Lectotype: ♀, Indonesia: Misool Island: no specific locality (OXUM), designated by Tsuneki, 1978b:23. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); R. Turner, 1908:523 (Australia: Cairns); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:23 (redescription), 77 and 81 (in key), 1980a:10 (in key), 90 (citation), 1981a:5 (in key), 21 (New Guinea; additional description).

**377. *planifrons* Tsuneki**

*Trypoxylon planifrons* Tsuneki, 1977c:9, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Wushe-Pihu (originally K. Tsuneki coll., now USNM). – Tsuneki, 1981c:3, 5 (in key), 26 (Taiwan; additional description), 1981f:44 (single member of *planifrons* species group); Nuhn and Menke, 1994:26 holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**378. *popondettae* Tsuneki**

*Trypoxylon popondettae* Tsuneki, 1981a:30, ♂, ♀. Holotype: ♂, Papua New Guinea: Northern District: Popondetta (BISH). – Tsuneki, 1981a:5, 6 (in key), 1981f:20 (one of 3 members of *angoramum* species group).

***ssp. woodlarkensae* Tsuneki**

*Trypoxylon popondettae woodlarkense* Tsuneki, 1981a:33, ♀. Holotype: ♀, Papua New Guinea: Woodlark Island (Murua): Kulumadon Hill (BISH). – Tsuneki, 1981a:5 (in key).

**379. *posterorubrum* Richards**

*Trypoxylon posterorubrum* Richards, 1934:290, ♀. Holotype: ♀, Mexico: Veracruz: Orizaba (MNHN). – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**380. *prominens* Tsuneki**

*Trypoxylon prominens* Tsuneki, 1979a:149, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Gi Sion Vill. de Tha Ngone (BISH). – Tsuneki, 1979a:15, 16 (in key), 1979c:7 (in key), 38 (Indonesia: Java), 1980a:13 (in key), 107 (Borneo), 1981f:13 (single member of *prominens* species group).

**381. *propinquum* Tsuneki**

*Trypoxylon propinquum* Tsuneki, 1980b:22, ♀, ♂. Holotype: ♂, Philippines: Manila (AEI). – Tsuneki, 1980b:4, 5 (in key), 1981f:42 (member of *buddha* species group).

**382. *providum* F. Smith**

*Trypoxylon providum* F. Smith, 1860b:125, ♀. Lectotype: ♀, Indonesia: Moluccas: Batjan: no specific locality (OXUM), designated by Tsuneki, 1978b:20. – F. Smith, 1862:55 (Indonesia), 1865:85 (New Guinea); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:21 (redescription), 79 (in key), 1980a:13, 14 (in key), 102 (Sulawesi; ♂), 1981f:75 (member of *bicolor* species group).

**383. *pseudoclavicerum* Antropov**

*Trypoxylon pseudoclavicerum* Antropov, 1995c:128, ♀. Holotype: ♀, Morocco: Tizi Mil. (K. Guichard coll.).

**384. *pulchellum* Tsuneki**

*Trypoxylon pulchellum* Tsuneki, 1979a:76, ♀. Holotype: ♀, Malaya: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:10 (in key).

**385. *pullatum* Tsuneki**

*Trypoxylon pullatum* Tsuneki, 1979a:170, ♀. Holotype: ♀, Malaya: Selangor: Frazer's Hill (BMNH). – Tsuneki, 1979a:17 (in key).

**386. *pumilio* Arnold**

*Trypoxylon pumilio* Arnold, 1959:321, ♂. Holotype: ♂, Lesotho: Mamathes (BMNH). – Leclercq, 1965a:84 (in key), 104 (not examined); R. Bohart and Menke, 1976:347 (listed).

**387. *punctatissimum* Arnold**

*Trypoxylon punctatissimum* Arnold, 1924:20, ♀. Holotype: ♀, South Africa: Cape Province: Algoa Bay near Port Elizabeth (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:338 (member of *scutatum* species group; as *punctatissimum* Gribodo); Arnold, 1945:11 (Madagascar; ♂); Leclercq, 1960a:99 (Madagascar, nesting in twigs), 1965a:93 (in key), 119 (revision; Zaire); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978a:5 (in key); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

**388. *punctivertex* Richards**

*Trypoxylon punctivertex* Richards, 1934:333, ♀. Holotype: ♀, Guyana: no specific locality (BMNH). – Richards, 1936b:460 (description of ♂, variation, Costa Rica); Sandhouse, 1940:155 (revision, ♂, USA: Texas: Brownsville and Victoria); Krombein in Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:347 (listed, Brazil to Texas); Krombein, 1979b:1645 (in catalog of North American Hymenoptera); Assis and Camillo, 1997:338-344 (observations in trap nests); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); von Boroski Borges and Blochtein, 2002:56 (sex ratio, nest parasites, nest structure, cocoon); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**389. *punjabense* Tsuneki**

*Trypoxylon punjabense* Tsuneki, 1979a:40, ♀, ♂. Holotype: ♀, n. India: Kangra Valley (BMNH). – Tsuneki, 1979a:5 (in key), 1981f:37 (member of *pacificum* species group).

**390. *pusillum* Tsuneki**

*Trypoxylon pusillum* Tsuneki, 1979a:66, ♀. Holotype: ♀, Malaya: Pahang: Cameron's Highlands (BMNH). – Tsuneki, 1979a:8 (in key).

**391. puttalamum Strand**

*Trypoxylon puttalamum* Strand, 1922b:197, ♀. Lectotype ♀, Sri Lanka: Puttalam (DEI), designated by Oehlke and Wudowenz, 1974:425. – R. Bohart and Menke, 1976:347 (listed).

**392. pygmaeum Cameron**

*Trypoxylon pygmaeum* Cameron, 1900b:79, "♀" = ♂. Holotype: ♂, India: Bengal: Barrackpore (OXUM). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897, as *pygmoenum*); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:41 (redescription), 76 (in key), 1979a:7 (in key), 52 (Vietnam, Laos; ♀), 1979b:4 (in key), 10 (Sri Lanka), 1981d:5 (Sri Lanka; additional description), 19 (in key), 24 (India), 1981f:32 (member of *pygmaeum* species group).

**393. quadriceps Tsuneki**

As *Trypoxylon koshunicon*: Tsuneki, 1966b:16 (♀ only) and 1971g:16 (♀, in key) corrected to *Trypoxylon quadriceps* by Tsuneki, 1981c:20.

*Trypoxylon quadriceps* Tsuneki, 1971g:12, ♀. Holotype: ♀, Taiwan: Nantou Prefecture: Pempuchi (originally K. Tsuneki coll., now USNM). – R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1977c:7 (Taiwan), 1981c:5, 7 (in key), 20 (Taiwan; additional description), 1981f:37 (member of *pacificum* species group); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon chihpense* Tsuneki, 1971g:13, ♀. Holotype: ♀, Taiwan: Taitung Prefecture: Chihpenchi (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon quadriceps* by Tsuneki, 1981c:20. – R. Bohart and Menke, 1976:345 (listed); Nuhn and Menke, 1994:25 (holotype transferred to USNM).

*Trypoxylon venustum* Tsuneki, 1977c:8, ♂, ♀. Holotype: ♂, Taiwan: Nantou Prefecture: Pempuchi (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon quadriceps* by Tsuneki, 1981c:20 – Nuhn and Menke, 1994:26 (holotype transferred to USNM).

**394. rajang Tsuneki**

*Trypoxylon rajang* Tsuneki, 1980a:56, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:8 (in key).

**395. regium Gussakovskij**

*Trypoxylon regium* Gussakovskij, 1932:11, ♀. Holotype: ♀, Russia: Primorskiy Krai: Sutshan (ZIL). – Gussakovskij, 1936:652 (redescription); Tsuneki, 1956g:5 (in key), 16 (redescription), 1967d:6 (Taiwan; as *Trypoxylon responsum regium*); R. Bohart and Menke, 1976:347 (listed, as *Trypoxylon responsum regium*); Tsuneki, 1978b:66 (reversed to full species status); Kazenas, 1980e:90 (Russia: Primorskiy Krai); Tsuneki, 1981e:7 (in key), 77 (discussion), 1981f:13 (member of *regium* species group); Antropov, 1986a:89 (Russia: Primorskiy Krai; description of ♂); Antropov in Nemkov, Kazenas, Budrys, et Antropov, 1995:419 (in key to Sphecidae of Russian Far East, as *regium regium*).

**ssp. hatogayuum Tsuneki**

*Trypoxylon regium hatogayuum* Tsuneki, 1956g:17, ♀. Holotype: ♀, Japan: Fukui Prefecture: Hatogayu (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:5, 9 (in key), 40 (description of ♂); Nambu, 1971a:1 (nesting habits); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978b:66 (the correct name is *Trypoxylon regium hatogayuum*), 1981c:48 (relations to *Trypoxylon taiwanum*), 1981e:7, 8 (in key), 77 (Japan; additional description); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.). – As *Trypoxylon responsum hatogayuum*: Tsuneki, 1967d:7 (Taiwan; new combination); Haneda, 1968a:44 (Japan); Nambu, 1968:22 (Japan); Haneda, 1969:68 (Japan: Yamanashi Prefecture); Tsuneki, 1970d:9 (life history); Nambu, 1971:1 (life history); Tsuneki, 1973e:33, 36 (in key); Nambu, 1973d:150 (Japan: Saitama Prefecture); Tsuneki and Moriyama, 1973:15 (orientation during emerging from nest); Nambu, 1975b:65 (Japan: Saitama Prefecture); Tano, 1994a:6 (holotype in K. Tsuneki collection).



**396. *regulare* Viereck**

*Trypoxylon regulare* Viereck, 1906:205, "♀" but actually ♂ (as *regularis*, incorrect original termination). Holotype: ♂, USA: Kansas: Douglas County: no specific locality (KU). – Rohwer, 1909g:379 (Kansas: Douglas County); Richards, 1934:315 (not examined); Sandhouse, 1940:163 (revision); Krombein *in* Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); LaBerge, 1956:528 (holotype in Snow Entomological Museum); R. Bohart and Menke, 1976:347 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); .

**397. *rekabum* Tsuneki**

*Trypoxylon rekabum* Tsuneki, 1980b:101, ♀ (reversed Baker + um). Holotype: ♀, Philippines: Mindanao: Surigao (USNM). – Tsuneki, 1980b:10 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**398. *richardsi* Sandhouse**

*Trypoxylon richardsi* Sandhouse, 1940:167, ♂, ♀. Holotype: ♂, USA: Maryland: Chavy Chase (USNM). – Krombein *in* Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1952b:177 (USA: West Virginia: Lost River State Park), 1954a:5 (West Virginia: Lost River State Park), 1959b:101 (nest in twig), 1963f:274 (Maryland: Plummers Island near Washington, D.C.); R. Bohart and Menke, 1976:347 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada).

**399. *ridleyi* Tsuneki**

*Trypoxylon ridleyi* Tsuneki, 1979a:166, ♀. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:17 (in key).

**400. *rohweriellum* Tsuneki**

*Trypoxylon rohweriellum* Tsuneki, 1980b:77, ♀. Holotype: ♀, Philippines: Luzon: Los Baños (USNM). – Tsuneki, 1980b:10 (in key), 1981d:69 (Philippines: Luzon); Nuhn and Menke, 1994:26 (holotype in USNM).

**401. *rubiginosum* Gussakovskij**

*Trypoxylon rubiginosum* Gussakovskij, 1936:662, ♀. Lectotype: ♀, Georgia: Sochi (ZIL), designated by Antropov, 1989a:55. – R. Bohart and Menke, 1976:347 (listed); Antropov *in* Bitsch et al., 2001:380 (in Sphecid Fauna of Western Europe).

*Trypoxylon adzharicum* Antropov, 1984:626, ♂. Holotype: ♂, Georgia: Batumi (ZMMU). Synonymized with *Trypoxylon rubiginosum* by Antropov, 1989a:56.

**402. *rubrifemoratum* Richards**

*Trypoxylon rubrifemoratum* Richards, 1934:303, ♀. Holotype: ♀, Panama: Paraiso (USNM). Paratype: Trinidad. – Vesey Fitzgerald, 1936:114 (Trinidad: on flowers of *Bidens* sp.); R. Bohart and Menke, 1976:347 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

***ssp. rubellum* Richards**

*Trypoxylon rubrifemoratum* var. *rubellum* Richards, 1934:303, ♀. Holotype: ♀, Argentina: Salta: Salta (...). – **As *Trypoxylon rubrifemoratum rubellum***: R. Bohart and Menke, 1976:347 (new status, listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**403. *rubrocaudatum* Tsuneki**

*Trypoxylon rubrocaudatum* Tsuneki, 1979a:34, ♀, ♂. Holotype: ♀, India: Madras: Anamalai Hills: Kadamparai (RMNH). – Tsuneki, 1979a:4, 8, 9 (in key), 1981f:37 (member of *pacificum* species group).

**404. *rufidens* Cameron**

*Trypoxylon rufidens* Cameron, 1905:374, sex not indicated. Holotype or syntypes: Mexico: no specific locality (BMNH). – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**ssp. trinidadianum Richards**

*Trypoxylon rufidens* var. *trinidadianum* Richards, 1934:326, ♂. Holotype: ♂, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:115 (type was collected in rice fields). – **As *Trypoxylon rufidens trinidadianum***: R. Bohart and Menke, 1976:347 (new status, listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

**405. rufigaster Tsuneki**

*Trypoxylon rufigaster* Tsuneki, 1979a:78, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:10, 11 (in key), 1981f:41 (single member of *rufigaster* species group).

**ssp. cavatum Tsuneki**

*Trypoxylon rufigaster cavatum* Tsuneki, 1980a:30, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:5, 10 (in key).

**406. rufimaculatum Antropov**

*Trypoxylon varipes rufimaculatum* Antropov, 1987:57, ♀. Holotype: ♀, Russia: Primorskiy Kray: 40 km SE Ussuriysk (ZMMU). – Antropov in Nemkov, Kazenas, Budrys, et Antropov, 1995:420 (in key to Sphecidae of Russian Far East). – **As *Trypoxylon rufimaculatum***: Antropov, 1995c:124 (new status, faunal records from Japan and Russian Far East); Nemkov, 1998c:685 (in supplementary key to Russian Far East *Trypoxylon*).

**407. rufimanum Spinola**

*Trypoxylon rufimanum* Spinola, 1851:43, ♂. Syntypes: ♂, Brazil: Pará: Belém (Torino). – F. Smith, 1856:378 (listed); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:281 (member of *fabricator* species group); R. Bohart and Menke, 1976:347 (listed); Casolari and Casolari Moreno, 1980:121 (specimens in M. Spinola collection); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

*Trypoxylon rufimanum* Spinola, 1853:59. Objective synonym of *Trypoxylon rufimanum* Spinola, 1851.

**408. rufiventre Tsuneki**

*Trypoxylon rufiventre* Tsuneki, 1976b:81, ♂, ♀. Holotype: ♂, Philippines: Tawi Tawi: Tarawakan (ZMK). – Tsuneki, 1980a:7 (in key), 49 (Sarawak; discuss.), 1980b:7 (in key), 65 (Philippines; additional description), 1981d:28 (Western Java), 1981f:51 (single member of *rufiventre* species group).

*Trypoxylon penangense* Tsuneki, 1979a:99, ♀, ♂ (♂ = *Trypoxylon rutilans*). Holotype: ♀, Malaya: Penang Island: Sengei Keihil Catchment area (BMNH). Synonymized with *Trypoxylon rufiventre* by Tsuneki, 1980a:2 and 50. – Tsuneki, 1979a:10 (in key), nec 11 (= *Trypoxylon rutilans*), 1979c:9 (in key, ♀ only; ♂ = *Trypoxylon rutilans*), 51 (Indonesia: Java; redescription).

**ssp. sutteri Tsuneki**

*Trypoxylon penangense sutteri* Tsuneki, 1979c:52, ♀. Holotype: ♀, Indonesia: Central Sumba: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:8 (in key).

**409. rugiceps Dalla Torre**

*Trypoxylon rugifrons* Cameron, 1888a:48, ♂, primary homonym of *Trypoxylon rugifrons* F. Smith, 1873. Holotype or syntypes: ♂, Mexico: Veracruz: Veracruz (BMNH). – Cameron, 1905:373 (comparison with *Trypoxylon nigripinis*).

*Trypoxylon rugiceps* Dalla Torre, 1897:708. Substitute name for *Trypoxylon rugifrons* Cameron, 1889. – Rau, 1934:151-156 (life history); Richards, 1934:281 (revision), 346 (life history summary), 1936b:457 (♀, Costa Rica);

R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

#### 410. *rugifrons* F. Smith

*Trypoxylon rugifrons* F. Smith, 1873b:100, ♀. Lectotype: ♀, Brazil: Amazonas: Ega, now Tefé (BMNH), designated by Richards, 1934:307. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897: 708 (in catalog of world Hymenoptera); nec Rau, 1933:151 (= *Trypoxylon fabricator*); Richards, 1934:306 (revision); R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 411. *rutilans* Tsuneki

As *Trypoxylon penangense* (corrected to *Trypoxylon rutilans* by Tsuneki, 1980a:2 and 52); Tsuneki, 1979a:11 (in key), 99 (♂ only), 1979c:9 (in key, ♂ only), 51 (♂ from Laos only).

*Trypoxylon rutilans* Tsuneki, 1980a:52, ♂. Holotype: ♂, Laos, Vientiane Province: Van Ban Eue (BISH), 1981f:48 (single member of *rutilans* species group).

#### 412. *ryukyuense* Tsuneki

*Trypoxylon ryukyuense* Tsuneki, 1966b:9, ♀. Holotype: ♀, Ryukyu Islands: Amami Oshima Island: Santaro-toge (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1966b:3 (in key), 1968d:54 (Ryukyu Islands), 1973e:33 (in key), 1981e:7 (in key), 80 (reverted to full species status), 1982f:47 (Okinawa), 1982g:61 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.); Yamane, Ikudome, and Tera-yama, 1999:527 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan). – As *Trypoxylon re-sponsum ryukyuense*: Tsuneki, 1967d:7 (Taiwan; new status); Murota, 1973a:101 (Ryukyu Islands: Amami Group); R. Bohart and Menke, 1976:347 (listed). – As *Trypoxylon regium ryukyuense*: Tsuneki, 1978b:66 (new combination), 1981c:7 (in key), 49 (Taiwan; additional description).

#### 413. *sacinasium* Tsuneki

*Trypoxylon sacinasium* Tsuneki, 1981a:61, ♂. Holotype: ♂, New Guinea: no specific locality (BMNH). – Tsuneki, 1981a:8 (in key), 1981f:76 (member of *sacinasium* species group).

#### 414. *salween* Tsuneki

*Trypoxylon salween* Tsuneki, 1981d:55, ♀, ♂. Holotype: ♀, ne. Burma: Kambaiti (Stockholm). – Tsuneki, 1981d:63 (in key), 1981f:73 (single member of *salween* species group).

#### 415. *samarensis* Tsuneki

*Trypoxylon samarensis* Tsuneki, 1980b:85, ♀, 116 (♂). Holotype: ♀, Philippines: Samar: no specific locality (USNM). – Tsuneki, 1980b:9, 11 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

#### 416. *sanctum* Richards

*Trypoxylon sanctum* Richards, 1934:323, ♀, ♂. Holotype: ♀, Brazil: Santos (NHMW). – R. Bohart and Menke, 1976:347 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 417. *sandakanum* Tsuneki

*Trypoxylon sandakanum* Tsuneki, 1980a:35, ♀. Holotype: ♀, North Borneo: Sandakan (USNM). – Tsuneki, 1980a:6 (in key), 1981d:65 (Brunei); Nuhn and Menke, 1994:26 (holotype in USNM).

#### 418. *sapporoense* Tsuneki

*Trypoxylon sapporoense* Tsuneki, 1960d:241, ♂. Holotype: ♂, Japan: Hokkaido: Sapporo (originally K. Tsuneki coll., now Hyogo Mus.). – Suda, 1972c:52 (Japan); Tsuneki, 1973a:15 (diagnostic characters), 16 (description of ♀), 1973e:34, 36 (in key), 1973o:113 (Japan: Fukui Prefecture); Nambu, 1975b:65 (Japan: Saitama Prefecture); R.

Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:3 (in key), 9 (Japan; additional description), 1981f:72 (single member of *sapporoense* species group), 1982b:16 (as *Pison sapporoense*; known from Korea); Tano, 1994a:6 (holotype in K. Tsuneki collection); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

*Trypoxylon pappi* Tsuneki, 1974a:363, ♀. Holotype: ♀, Korea, 20 km NE Kaesong, Mts Pakyon (TMB). Synonymized with *Trypoxylon sapporoense* by Tsuneki, 1981e:9. – R. Bohart and Menke, 1976:630 (listed).

*Trypoxylon pappi* Tsuneki, 1991:200, as new species. Nomen nudum.

#### 419. *sarum* Tsuneki

*Trypoxylon sarum* Tsuneki, 1980b:86, ♀. Holotype: ♀, Philippines: Mindanao: Surigao (USNM). – Tsuneki, 1980b:8 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

#### 420. *sauteri* Tsuneki

As *Trypoxylon fenchihuense*: Tsuneki, 1977j:272 (Taiwan; ♀), corrected to *Trypoxylon sauteri* by Tsuneki, 1981c:25. *Trypoxylon sauteri* Tsuneki, 1981c:25, ♀. Holotype: ♀, Taiwan: Pingtung Prefecture: Teraso, now Manchou (Basel Mus.). – Tsuneki, 1981c:4, 6 (in key); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

#### 421. *sayabouryense* Tsuneki

*Trypoxylon sayabouryense* Tsuneki, 1979a:175, ♂. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:18 (in key), 1981f:64 (single member of *sayabouryense* species group).

#### 422. *scaposum* Tsuneki

*Trypoxylon scaposum* Tsuneki, 1980b:51, ♀. Holotype: ♀, Philippines: Negros: Mt. Canlaon (AEI). – Tsuneki, 1980b:6 (in key).

#### 423. *schmidti* Richards

*Trypoxylon schmidti* Richards, 1936b:460, ♂, ♀. Holotype: ♂, Costa Rica (von Schulthess coll.). – Vesey-FitzGerald, 1938:191 (Trinidad); R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 424. *schmiedeknechtii* Kohl

*Trypoxylon schmiedeknechtii* Kohl, 1906a:202, ♂ (as *Schmiedeknechtii*, incorrect original capitalization). Syntypes: Indonesia: Java: no specific locality (NHMW). – Tsuneki, 1974b:627 (Thailand); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1976b:74 (Philippines; redescription), 1977h:4 (Singapore; taxonomy), 1978a:6 (in key), 21 (re-description), 86 (relationships to other species), 1979a:19 (citation), 1979b:3 (in key), 5 (Sri Lanka), 1979c:11 (citation), 1980a:15 (Sarawak), 1980b:4 (in key), 13 (Philippines), 1981c:3 (in key), 12 (Taiwan; additional description), 1981d:2 (Sri Lanka), 18 (in key), 21 (India), 33 (Burma), 61 (in key), 64 (Brunei), 68 (Philippines: Luzon), 1981e:3 (in key), 9 (Ryukyu Islands: Iriomote Island; citation), 1981f:47 (member of *melanurum* species group), 1982d:10 (Taiwan), 1982g:61 (known from the Ryukyu archipelago); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Cardale, 1985:265 (in catalog of Australian Sphecidae); Tsuneki, 1986:30 (known from the Ryukyu archipelago); Dollfuss, 1989:13 (type material in NHMW); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan, as *schmieckecknechti*); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon pileatum* var. *subpileatum* Strand, 1922b:163, ♀, ♂. Lectotype: ♀, Taiwan: Kankau, now Hengchun (DEI), designated by Oehlke and Wudowenz, 1974:425. Synonymized with *Trypoxylon schmiedeknechti* by Tsuneki, 1978a:21. – As *Trypoxylon subpileatum*: Tsuneki, 1966b:2 (in key), 4 (Taiwan; redescription), 1967d:3 (Taiwan), 1968d:54 (Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:1 (Taiwan), 1972c:1 (Taiwan; variation); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1977c:7 (Taiwan), 1977j:270 (Taiwan); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

*Trypoxylon chinense* Gussakovskij, 1936:648, ♀. Holotype: ♀, China: Tientsin (ZIL). Synonymized with *Trypoxylon schmiedeknechti* by Antropov, 1987:61. – R. Bohart and Menke, 1976:345 (listed); Tsuneki, 1978a:21 and 40 (tentative synonym of *Trypoxylon schmiedeknechti*).

#### **ssp. connexum R. Turner**

*Trypoxylon connexum* R. Turner, 1908:522, ♀, ♂. Lectotype: ♀, Australia: Queensland: Mackay (BMNH), designated by Tsuneki, 1978b:70. – **As *Trypoxylon schmiedeknechti connexum***: Tsuneki, 1978a:6 (in key), 21 and 40 (new status), 1981a:4 (in key), 13 (New Guinea), 1981b:100 (in key), 101 (Australia), 1982a:45 (Bismarck Archipelago); Cardale, 1985:265 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

*Trypoxylon lavongaianum* Tsuneki, 1977h:1, 19, ♀. Holotype: ♀, Bismarck Islands: Lavongai: Banatam (ZMK). Synonymized with *Trypoxylon schmiedeknechti connexum* by Tsuneki, 1978a:21 and 40.

#### **ssp. hungtouense Tsuneki**

*Trypoxylon subpileatum hungtouense* Tsuneki, 1977c:7, ♀. Holotype: ♀, Botel Tobago Island: Hungtou (T. Murota coll.). – Hua, 2006:283 (in list of Chinese insects, geographic distribution).

#### **425. scitulum Tsuneki**

*Trypoxylon venustum* Tsuneki, 1979a:63, ♂, primary homonym of *Trypoxylon venustum* Tsuneki, 1977. Holotype: ♂, Laos: Bolouens Plateau: 1 km S Thateng (BISH). – Tsuneki, 1979a:8 (in key); Antropov, 1995c:125 (synonymy).

*Trypoxylon scitulum* Tsuneki, 1980a:2. Substitute name for *Trypoxylon venustum* Tsuneki, 1979. – Tsuneki, 1981f:37 (member of *pacificum* species group).

*Trypoxylon bolouense* Tsuneki, 1992c:54. Unnecessary Substitute name for *Trypoxylon venustum* Tsuneki, 1979.

#### **426. sculleni Sandhouse**

*Trypoxylon sculleni* Sandhouse, 1940:160, ♂, ♀. Holotype: ♂, USA: Oregon: Corvallis (USNM). – Krombein *in* Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); LaBerge, 1956:528 (paratype in Snow Entomological Museum); F. Parker and R. Bohart, 1966:95 (California: Davis, Nevada: Mustang, Patrick, Verdi; parasites: *Aprostocetus* sp., Ichneumonidae, *Eurytoma stigma* Ashmead, Eurytomidae, *Trichrysis doriae* Gribodo, Chrysididae, *Anthrax irrorata* Say, Bombyliidae, *Amobia floridensis* Townsend, Sarcophagidae, *Dibrachys* sp., Pteromalidae); G. Bohart, Nye, and Hawthorn, 1970:48 (Utah: Logan, onion pollinator); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:347 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Zack, 1984:38 (paratypes in James Entomological Collection, Washington State University); Frohlich, Clark, Parker, and Griswold, 1988:268 (Oregon: Malheur County: Leslie Gulch); Coville, 1990:2 (may be a complex of species); Finnamore, 1994:210 (Canada: Alberta: Wagner Natural Area 8 km W Edmonton); Antropov, 2003:438 (in key to North American species of *figulus* group); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 55 (first record from Ontario: St Lawrence National Park).

#### **427. scutatatum Chevrier**

*Trypoxylon scutatatum* Chevrier, 1867a:231, ♀ (as *scutatus*, incorrect original termination). Holotype: ♀, Switzerland: Genève (MHNG). – Girard, 1879:932 (recognition characters); Kohl, 1883e:657 (Switzerland, as *scutatus*), 1885a:193 (in key to European *Trypoxylon*), 199 (in revision of European species) 206 (in checklist of world *Trypoxylon*); Gasperini, 1887:15 (Dalmatia: Spalato and San Giorgio, now Croatia: Split and Sućuraj on Hvar Island); Ed. André, 1888:208 (in revision of Sphecidae of Europe and Algeria), 17\* (bibliographic references); Baldini, 1894:54 (Italy: Modena area); Medina, 1894a:260 (Spain); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Flamary, 1898:38 (France: Saône-et-Loire: Mâcon area); Ferton, 1899:344 (prey, *Uloborus walkenaerius* Latreille, lived paralyzed for two months); de Cobelli, 1900b:188 (Italy: Rovereto, nesting in abandoned nests of *Chalicodoma muraria* Ratz.); Pigeot, 1902:63 (nesting habits); Antiga and Bofill, 1904:13 (Spain: Cataluña Prov-

ince); E. Saunders, 1904c:635 (Spain); W. Schulz, 1904b:102 (Greece: Syros Island, as Syra); Kohl, 1906a:200 (a species with frontal shield), 202 (in key to *scutatum* group); Mercet, 1906c:464 (in key to Palearctic species); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); Zavattari, 1910:4 (Italy: Isola d'Elba: Portoferraio); Morice, 1911:131 (Algeria: Biskra); Berland, 1921:533 (Greece); Maidl, 1922:73 (Croatia); Noskiewicz, 1924b:181 (Poland: Podole Region: Mielnica and Sinków, now Ukraine); Berland, 1925d:151 (in Sphecidae Fauna of France); Strohm, 1925:212 (Germany: Baden-Württemberg: Kaiserstuhl); von Schulthess, 1926b:219 (Tunisia); Micheli, 1929:41 (nest and prey); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Grandi, 1931:50 (Micheli's observations reported); 1934:131 (Italy: Toscana: San Vincenzo); Giner Marí, 1934:135 (Spain); Guiglia, 1934b:305 (Libya: bibliography and summary of locality records); Richards, 1934:338 (member of *scutatum* species group), 344 (life history summary); Grandi, 1935a:111 (Italy); Gussakovskij, 1935:421 (Tajikistan: Kulab; nesting in loess cliffs, hence common in treeless areas); Vergne, 1935:119 (France: Auvergne: Les Martres-d'Artières); Gussakovskij, 1936:646 (revision); Maréchal, 1936:393 (review of literature on nesting habits); Guiglia, 1941c:160 (Italy: Calabria: Grande Sila); Giner Marí, 1943a:216 (in Sphecidae Fauna of Spain); Guiglia, 1943b:72 (Albania: Kopliku), 1944a:149 (Cyprus: Limassol), 1944b:33 (Italy); Giner Marí, 1945b:360 (e. Morocco: Muley Rechid); de Beaumont, 1947b:396 (Cyprus); Guiglia, 1948c:202 (Italy: Sardegna: Villasalto); Šnoflak in Zavadil and Šnoflak, 1948:58 (in key to Sphecidae of Czechoslovakia); de Andrade, 1949:20 (Portugal); de Beaumont, 1950f:409 (Algeria); Pittioni, 1950:26 (Cyprus); Cleu, 1953:51 (France: Ardèche River basin; as *scutatus*); Guiglia, 1953b:10 (Italy: Lucania-Calabria: Santicelli); Leininger, 1953:18 (Germany: Baden-Württemberg: Ettlingen); de Beaumont, 1954e:92 (Italy); Grandi, 1954:238 (Italy); Lehrer, 1955:265 (Romania: Moldova: Iași); Vogrin, 1955:40 (Yugoslavia); Bytinski-Salz, 1956:226 (Turkey); Bajári, 1957a:66 (in key to Hungarian Sphecidae), 1957b:136 (first record from Hungary); de Beaumont, 1957a:148 (Morocco), 1957b:137 (n. Iran); Grandi, 1957:388 (Italy); Guiglia, 1957:146 (Italy: Isole Pelagie); Nouvel and Ribaut, 1958:16 (France: Pyrénées-Orientales: Banyuls-sur-Mer); Pulawski, 1958a:186 (Bulgaria: Aitos); Compte Sart, 1959:137 (Spain: Mayorca); de Beaumont, 1959a:30 (Italy); Diniz, 1959:31 (Portugal: Cascais, S. João do Estoril, Vale de Gaio); Grandi, 1959b:287 (Italy: Livorno: Quercianella); Suárez, 1959:59 (Spain: Almería Province); de Beaumont, 1960a:21 (Greece: Rhodes Island), 1960b:247 (Libya); Guiglia, 1960:361 (Italy: Isole Pelagie: Lampedusa); Noskiewicz and Pulawski, 1960:107 (in key to Polish Sphecidae, not yet found in Poland); de Beaumont, 1961c:51 (Greece: Crete Island); Grandi, 1961:184 (life history), 1962:96 (Italy); Myartseva, 1963b:58 (Turkmenistan: lower Murgab River); Ceballos, 1964:94 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:85 (in Sphecidae Fauna of Switzerland), 1965a:55 (Greece); Myartseva, 1965:80 (Turkmenistan: Akibay; Bayram-Ali district); Balthasar, Hrubant, and Hrubant, 1967:170 (Bulgaria: Sozopol); de Beaumont, 1967a:338 (Turkey); Gauss, 1967:554 (Germany: Baden-Württemberg: Kaiserstuhl, Nördliches Rheinvorland); Scobiola-Palade, 1967b:44 (Romania); Benedek, 1968:73 (Hungary, visiting flowers of *Pastinaca sativa* L.); de Beaumont, 1970a:401 (Afghanistan); Benedek, 1969a:84 (Hungary; marshy meadow); Zangheri, 1969:1704 (Italy); Benedek, 1970:99 (Hungary: Tapolca); Oehlke, 1970:726 (not recorded from Democratic Germany); Balthasar, 1972:227 (in Sphecidae Fauna of Czechoslovakia); Kazenas, 1972b:156 (Kazakhstan); Myartseva, 1972a:82 (Turkmenistan); de Beaumont, Bytinski-Salz and Pulawski, 1973:20 (Israel); Erlandson, 1974:76 (Spain); Gauss, 1974:199 (Germany: Baden-Württemberg: Schelingen in Kaiserstuhl); R. Bohart and Menke, 1976:347 (listed); Georghiou, 1977:193 (Cyprus); Kazenas, 1978b:145 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:252 (in key to Sphecidae of European part of former USSR); Tsuneki, 1978a:86 (relationships to other species); Benedek, 1979:232 (Hungary: Bakony Hills: Fenyőfő); Pagliano, 1980:129 (Italy: Sardegna); Tsuneki, 1981f:46 (member of *scutatum* species group; the group consists of 7 species, of which 4 are listed); Józán, 1983:100 (Hungary); Schmidt and Westrich, 1983:123 (Greece); Gayubo, 1984b:90 (Spain: Salamanca Province), 1984c:373 (Portugal: El Algarve Province); Józán, 1985b:57 (Hungary S Lake Balaton), 84 (ecological and zoogeographic characteristics); Schmidt, 1984:295 (Federal Germany: Baden-Württemberg); Westrich and Schmidt, 1985b:112 (Federal Germany: endangered in Baden-Württemberg); Gayubo, 1986c:35 (Spain:

Zamora Province); Gayubo and Sanza, 1986:56 (Spain: Burgos, Segovia); Gayubo and Tormos, 1986a:15 (Spain: Castellón de la Plana); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Józán, 1986:370 (Hungary: Kiskunság National Park); Dollfuss, 1987:21 (new to Austria: Bisamberg near Wien); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Dollfuss, 1988:13 (Austria: Bisamberg); Gayubo and Mingo, 1988:88 (Spain); Karsai, 1988:100 (Hungary: Kiskunság National Park); Pádr *in* Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Gayubo, Asís, and Tormos, 1990a:20 (Spain); Jacobs and Oehlke, 1990:174 (unknown from Democratic Germany); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Day, 1991:xix (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Negrísolo, 1991:319 (Italy: Treviso and Udine Provinces); Gayubo, Borsato, and Osella, 1992:284 (Turkey); Józán, 1992c:289 (Hungary: Zselic Hills); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Dollfuss, 1994:98 (endangered in Austria); Tormos, Asís, and Gayubo, 1994:188, 212 (Spain: Albacete Province); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Negrísolo, 1995a:23 (Italy: Veneto); Negrísolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:88 (Italy: Ferrara Province); Pagliano and Scaramozzino, 1995:732 (Italy: Island of Lampedusa); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: endangered); Schmidt and Schmid-Egger, 1997:32 (in checklist of German Sphecidae); Shkuratov, 1998:98 (Russia: Rostov Oblast'); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); González, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Zehnder and Zettel, 1999:131 (Switzerland: recolonization of flooded area in Valais Canton); Blösch, 2000:256 (in Sphecid Fauna of Germany); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Antropov *in* Bitsch et al., 2001:383 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia), 176 (review of known biology); Ohl et al., 2001:142 (distribution in Germany by provinces); Kazenas, 2002a:86 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:142 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: Palandöken); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Pagliano, 2003b:132 (Italy: Islands of Lampedusa and Pantelleria); Schmid-Egger, 2003:759 (Italy: Sicilia: Amenta, Agrigento, Castelammare); Gayubo, Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Kazenas, 2004c:105 (Kazakhstan: western Tien Shan); Nazarova, 2004:107 (Tajikistan: Badakhshan Region: Rushan District: villages Siponch and Visav in Bartang River valley); Wiśniowski and Szczepko, 2004:92 (in key to Polish *Trypoxylon*, not known from Poland); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:127 (in key to selected Iranian Sphecidae); Nazarova, 2005:94 (alfalfa fields in southwestern Tajikistan); Yildirim and Ljubomirov, 2005:1800 (Turkey: Erzurum and Şanlıurfa provinces); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E).

*Trypoxylon ammophiloides* A. Costa, 1871b:47, ♂. Holotype: ♂, Italy: Sardinia: no specific locality (NAPOLI). Synonymized with *Trypoxylon scutatatum* by Antropov, 1989b:55. – Kohl, 1885a:194 (in key to European *Trypoxylon*), 201 (original description copied), 202 (in checklist of world *Trypoxylon*); Ed. André, 1888:206 (in revision of Sphecidae of Europe and Algeria), 17\* (bibliographic references); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Mercet, 1906c:463 (in key to Palearctic species); Gussakovskij, 1936:663 (original description copied); R. Bohart and Menke, 1976:345 (listed).

*Trypoxylon scutigerum* Taschenberg, 1881:780, ♂. Holotype: ♂, Ethiopia: no specific locality (HALLE). Synonymized with *Trypoxylon scutatatum* by Kohl, 1884:206. – Kohl, 1906a:200 (a species with frontal shield).

*Trypoxylon quartinae* Gribodo, 1884a:278, ♀ (as *Quartinae*, incorrect original capitalization). Syntypes: ♀, Italy: Piemonte: Moncalieri near Torino (MHNG). Synonymized with *Trypoxylon scutatatum* by Ed. André, 1888:17\*. –

Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Kohl, 1906a:200 (a species with frontal shield, synonym of *scutatatum* Chevrier).

**ssp. *kaszabi* Tsuneki**

*Trypoxylon kaszabi* Tsuneki, 1971:409, ♂, ♀. Holotype: ♂, Mongolia: Middle Gobi aymag: Somon Delgerzogt (TMB). – R. Bohart and Menke, 1976:346 (listed). – As *Trypoxylon scutatatum kaszabi*: Antropov, 1989a:56 (new status).

**ssp. *nursei* Tsuneki**

*Trypoxylon scutatatum nursei* Tsuneki, 1978a:63, ♀, ♂. Holotype: ♂, Pakistan: Quetta (BMNH). – Tsuneki, 1978a:6 (in key), 1979a:19 (citation).

**428. *scutiferum* Taschenberg**

*Trypoxylon scutiferum* Taschenberg, 1875:379, ♀. Syntypes: ♀, Brazil: no specific locality (HALLE). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:286 (revision); R. Bohart and Menke, 1976:347 (listed); Amarante, 1993:19 (ne. Brazil); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**429. *scutifrons* de Saussure**

*Trypoxylon scutifrons* de Saussure, 1892:523, ♀, ♂. Syntypes: Madagascar: Andrangoloaka, Anosibé (MHNG). – Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Kohl, 1906a:201 (a species with frontal shield), 203 (in key to *scutatatum* group); Kohl, 1909:373 (Madagascar: Toamasina); R. Turner, 1911b:373 (Seychelles Islands); Bordage, 1912:58 (Isle of Réunion: life history); von Schulthess in Friederichs, 1918a:48 (Madagascar: Ilôt Prune); Richards, 1934:338 (member of *scutatatum* species group), 344 (life history summary); Arnold, 1945:14 (Madagascar); Vesey-Fitzgerald, 1950:75 (new to Seychelles Islands, as *saitifrons*); Leclercq, 1960a:99 (Madagascar, nesting in old nests of *Icaria*, a vespid; variation), 1961d:101 (Madagascar); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1978a:6, 7 (in key), 76 (redescription), 86 (relationships to other species), 1981f:47 (single member of *scutifrons* species group); Madl, Matyot, and Schödl, 1996:833 (Seychelles Islands); Madl, 1997:820 (Madagascar: Nosy Boraha Island), 821 (in checklist of Nosy Boraha Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

**ssp. *aldabranum* Tsuneki**

*Trypoxylon scutifrons aldabranum* Tsuneki, 1978a:80, ♀, ♂. Holotype: ♀, Seychelles Islands: Aldabra Island (BMNH). – Tsuneki, 1978a:7 (in key).

**ssp. *mauritinum* Tsuneki**

*Trypoxylon scutifrons mauritinum* Tsuneki, 1978a:83, ♀. Holotype: ♀, Mauritius (BMNH). – Tsuneki, 1978a:7 (in key).

**ssp. *seychellense* Tsuneki**

*Trypoxylon scutifrons seychellense* Tsuneki, 1978a:84, ♀, ♂. Holotype: ♂, Seychelles Islands: Mahe Island (BMNH). – Tsuneki, 1978a:7 (in key), 1979a:19 (citation).

**430. *sectum* Tsuneki**

*Trypoxylon sectum* Tsuneki, 1980a:86, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:10 (in key).

**431. *sedlaceki* Tsuneki**

*Trypoxylon sedlaceki* Tsuneki, 1981a:52, ♀. Holotype: ♀, New Guinea: Morobe District: Bulolo (AEI). – Tsuneki, 1981a:7 (in key).

**432. *sedonense* Tsuneki**



*Trypoxylon sedonense* Tsuneki, 1979a:120, ♀. Holotype: ♀, Laos: Sedone Province: Pacse (BISH). – Tsuneki, 1979a:14 (in key).

**433. *segregatum* Richards**

*Trypoxylon segregatum* Richards, 1934:331, ♀. Holotype: ♀, Paraguay: Asunción (MNHU). Paratypes: Argentina. – R. Bohart and Menke, 1976:347 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**434. *selangor* Tsuneki**

*Trypoxylon selangor* Tsuneki, 1979a:72, ♀. Holotype: ♀, Malaya: Selangor: Ulu Langat (BISH). – Tsuneki, 1979a:9 (in key), 1981d:28 (in key).

**435. *semicompluvium* Tsuneki**

*Trypoxylon semicompluvium* Tsuneki, 1980b:98, ♂. Holotype: ♂, Philippines: NW Panay (USNM). – Tsuneki, 1980b:10 (in key), 1981f:48 (member of *apicatum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**436. *semongoh* Tsuneki**

*Trypoxylon semongoh* Tsuneki, 1980a:100, ♀. Holotype: ♀, Sarawak, Mt. Mulu (BMNH). – Tsuneki, 1980a:13 (in key).

**437. *semperi* Tsuneki**

*Trypoxylon semperi* Tsuneki, 1980b:30, ♂. Holotype: ♂, Philippines: Luzon: no specific locality (Stockholm Mus.). – Tsuneki, 1980b:5 (in key), 1981f:57 (single member of *semperi* species group).

**438. *senegambicum* Kohl**

*Trypoxylon senegambicum* Kohl, 1906a:202, ♀. Syntypes: ♀, Senegal: no specific locality (NHMW). – W. Schulz, 1906:312 (Fernando Po, now Bioko, comparison with *Trypoxylon scutatatum*); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (lectotype in NHMW).

*Trypoxylon paleotropicum* Schulz, 1906:... Synonymized with *Trypoxylon senegambicum* by ...

**439. *seyrigi* Arnold**

*Trypoxylon seyrigi* Arnold, 1945:12, ♀ (as *Seyrigi*, incorrect original capitalization). Syntypes: Madagascar: Bekily, Ivondro, Ranomafana, Roget (MNHN). – R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1978a:7 (in key); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

**440. *sextum* Tsuneki**

*Trypoxylon sextum* Tsuneki, 1979a:59, ♂. Holotype: ♂, Malaya: Perak: Larut Hills (BMNH). – Tsuneki, 1979a:7 (in key), 1981f:37 (member of *pacificum* species group).

**441. *shakha* Tsuneki**

*Trypoxylon shakha* Tsuneki, 1979a:106, ♀. Holotype: ♀, Malaya: Penang: Batu Feringgi (BMNH). – Tsuneki, 1979a:12 (in key), 1980a:7, 8 (in key), 53 (Borneo; additional description; ♂), 1981f:58 (member of *coloratum* species group).

**442. *shannoni* Richards**

*Trypoxylon shannoni* Richards, 1934:334, ♂. Holotype: ♂, Peru: Chosica (USNM). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**443. *shanshan* Tsuneki**

*Trypoxylon shanshan* Tsuneki, 1981d:52, ♀. Holotype: ♀, Burma: South Shan State: 40 km E Taunggyi (Stockholm). – Tsuneki, 1981d:62 (in key).

**444. *shimoyamai* Tsuneki**

*Trypoxylon shimoyamai* Tsuneki, 1958b:7, ♀. Holotype: ♀, Japan: Towada (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1958d:53 (description of ♂); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1973e:34, 37 (in key); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1981e:8 (in key), 30 (Japan; redescription), 1981f:19 (member of *nodosicorne* species group); Antropov, 1986a:90 (Russia: Primorskiy Krai); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:420, 421 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

**445. *sibolangitum* Tsuneki**

*Trypoxylon sibolangitum* Tsuneki, 1979c:52, ♀. Holotype: ♀, Indonesia: North Sumatra: Sibolangit (RMNH). – Tsuneki, 1979c:9 (in key).

**446. *sibuyanense* Tsuneki**

*Trypoxylon sibuyanense* Tsuneki, 1980b:41, ♂. Holotype: ♂, Philippines: Sibuyan Island: no specific locality (USNM). – Tsuneki, 1980b:6 (in key), 1981f:23 (member of *appendiculatum* species group; as *subuyanense*); Nuhn and Menke, 1994:26 (holotype in USNM).

**447. *silvestre* Richards**

*Trypoxylon silvestre* Richards, 1934:305, ♀. Syntypes: ♀, Guyana: Essequibo River at Moraballi Creek, Kalacoon, and Kartabo (BMNH, USNM). – Richards, 1934:345 (nest site and structure); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**448. *silvicola* Tsuneki**

*Trypoxylon silvicola* Tsuneki, 1980a:37, ♀, ♂. Holotype: ♂, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:6 (in key), 1981f:48 (member of *apicatum* species group).

**449. *simile* Tsuneki**

*Trypoxylon simile* Tsuneki, 1979a:86, ♂. Holotype: ♂, Singapore (USNM). – Tsuneki, 1979a:12 (in key), 1981f:58 (member of *coloratum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**450. *singaporense* Tsuneki**

*Trypoxylon singaporense* Tsuneki, 1979a:29, ♂. Holotype: ♂, Singapore (USNM). – Tsuneki, 1979a:4 (in key), 1980a:4 (in key), 19 (Borneo; additional description), 1981d:64 (Sarawak; additional description), 1981f:25 (single member of *singaporensis* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

***ssp. surigaonis* Tsuneki**

*Trypoxylon singaporense surigaonis* Tsuneki, 1980b:23, ♀. Holotype: ♀, Philippines: Surigao: no specific locality (USNM). – Tsuneki, 1980b:5 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**451. *singator* Tsuneki**

*Trypoxylon singator* Tsuneki, 1981d:24, ♀. Holotype: ♀, Singapore (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM).

**452. *sinuosiscute* Arnold**

*Trypoxylon sinuosiscute* Arnold, 1945:13, ♀, ♂, incorrect original termination. Syntypes: Madagascar: Behara, Bekily (MNHN). – Leclercq, 1961d:101 (Madagascar); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1978a:6 (in key), 84 (redescription), 86 (relationships to other species), 1981f:17 (single member of *sinuosiscute* species group); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntype in Bulawayo Museum); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

**453. *smithi* Tsuneki**

*Trypoxylon smithi* Tsuneki, 1979a:109, ♀. Holotype: ♀, Malaysia: Bukit Kutu (BMNH). – Tsuneki, 1979a:12 (in key).

**454. *sogdianum* Gussakovskij**

*Trypoxylon sogdianum* Gussakovskij, 1940:84. Nomen nudum.

*Trypoxylon sogdianum* Gussakovskij, 1952:253, ♀, ♂. Syntypes: Tajikistan: Kondara 35 km N Dushanbe (ZIL). – R. Bohart and Menke, 1976:348 (listed); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia).

**455. *solivagum* Arnold**

*Trypoxylon solivagum* Arnold, 1946:67, ♂, ♀. Syntypes: Malawi: Zomba (SAM). – Leclercq, 1965a:89 (in key), 113 (revision; Zaire); R. Bohart and Menke, 1976:348 (listed); Antropov, 1993b:54 (Central African Republic).

**456. *solomonense* Tsuneki**

*Trypoxylon solomonense* Tsuneki, 1981a:83, ♀, ♂. Holotype: ♀, Solomon Islands: Florida Island: Tulagi (RMNH). – Tsuneki, 1981a:10 (in key), 1981f:77 (member of *eximium* species group).

**457. *sonani* Tsuneki**

*Trypoxylon sonani* Tsuneki, 1986:28, ♀. Holotype: ♀, Japan: Miyazaki Prefecture: Koyu-gun: Kawaminami-cho (Ent. Lab. Min. Agr. For. Japan at Tsukuba).

**458. *spangleri* Tsuneki**

*Trypoxylon spangleri* Tsuneki, 1979a:164, ♂. Holotype: ♂, Thailand: Nakhon, Ratchasima Province: Nakhon Ratchasima, 60 km, Sakaerat Experimental Station (USNM). – Tsuneki, 1979a:9, 17 (in key), 1981f:62 (single member of *spangleri* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**459. *speciosum* Tsuneki**

*Trypoxylon speciosum* Tsuneki, 1979a:104, ♀. Holotype: ♀, Malaya: Kedah Peak (BMNH). – Tsuneki, 1979a:12 (in key).

**460. *srilankum* Tsuneki**

*Trypoxylon srilankum* Tsuneki, 1979b:18, ♂, ♀. Holotype: ♂, Sri Lanka: Amparai District: Ekgal Aru, Reservoir Jungle (USNM). – Tsuneki, 1979b:4 (in key), 1981d:16 (Sri Lanka; additional description), 20 (in key), 1981f:67 (single member of *srilankum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**461. *staudingeri* Richards**

*Trypoxylon staudingeri* Richards, 1934:324, ♀. Holotype: ♀, Peru: Villoanota (MNHU). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**462. *stevensoni* Arnold**

*Trypoxylon stevensoni* Arnold, 1924:17, ♀, ♂ (as *Stevensoni*, incorrect original capitalization). Syntypes: Zimbabwe: Matopos and Umgusa River valley (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:93 (Zaire); Richards, 1934:315 (member of *figulus* species group); Leclercq, 1965a:82 (in key), 102 (revision, Zaire); R. Bohart and Menke, 1976:348 (listed); Antropov, 1993b:54 (Zimbabwe); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

**463. *stieglmayri* Richards**

*Trypoxylon stieglmayri* Richards, 1934:335, ♀. Holotype: ♀, Brazil: Rio Grande do Sul: Rio Grande do Sul (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**464. *straatmani* Tsuneki**

*Trypoxylon straatmani* Tsuneki, 1981a:17, ♂. Holotype: ♂, New Guinea: Mamai Plantation E Port Glasgo (BISH). – Tsuneki, 1981a:4 (in key), 1981f:42 (member of *kuchingense* species group).

#### 465. *striolatum* Tsuneki

As *Trypoxylon tawitawiense*: Tsuneki, 1976b:86 (♀ only); corrected to *Trypoxylon striolatum* by Tsuneki, 1980a:2 and 74.

*Trypoxylon striolatum* Tsuneki, 1979a:113, ♀. Holotype: ♀, Laos: Vientiane Province: Vill. de Tha Ngone (BISH). – Tsuneki, 1979a:13 (in key), 1979c:9 (in key), 54 (Indonesia: Java, Sumatra; variation), 1980a:9, 10, 11, 12 (in key), 74 (Borneo; additional description), 1980b:8, 9, 10 (in key), 76 (Philippines), 1981d:31 (a headless specimen from India possibly belongs to this species), 66 (Brunei), 1981f:13 (single member of *striolatum* species group).

#### 466. *stroudi* Gribodo

*Trypoxylon stroudi* Gribodo, 1884d:279, ♀, ♂ (as *Stroudi*, incorrect original capitalization). Syntypes: South Africa: Cape Province: Port Elizabeth (Genova). – Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Kohl, 1906a:200 (a species with frontal shield), 203 (in key to *scutatum* group, as *Stroudii*); Arnold, 1924:23 (revision), 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:94 (Zaire, determination?); Richards, 1934:338 (member of *scutatum* species group); Guiglia, 1943c:75 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:231 (Ethiopia: Gamo Gofa: Caschei); Arnold, 1959:324 (Tanzania: Rukwa Valley); Leclercq, 1965a:96 and 100 (in key), 123 (revision; Zimbabwe); R. Bohart and Menke, 1976:348 (listed); Antropov, 1993b:54 (Central African Republic, Zimbabwe).

#### 467. *succinctum* Cresson

*Trypoxylon succinctum* Cresson, 1865a:149, ♀. Holotype: Cuba: no specific locality (IZAC). – Packard, 1867:418 (listed); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Cresson, 1916:103 (holotype in Gundlach collection); Richards, 1934:281 (member of *fabricator* species group), 1969:123 (Cuba); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:7 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Portuendo and Fernández, 2004:135 (Cuba: Sierra Maestra and Nipe-Sagua-Baracoa mountains); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae; also: Grand Cayman Island).

#### 468. *sulcatoides* Richards

*Trypoxylon sulcatoides* Richards, 1934:320, ♂. Holotype: ♂, Argentina: Mendoza: Mendoza (BMNH). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 469. *sumatraense* Tsuneki

*Trypoxylon sumatraense* Tsuneki, 1979c:30, ♀. Holotype: ♀, Indonesia: North Sumatra: Sibolangit (RMNH). – Tsuneki, 1979c:6 (in key).

#### *ssp. borneonis* Tsuneki

*Trypoxylon sumatraense borneonis* Tsuneki, 1980a:68, ♀. Holotype: ♀, Sarawak: Mt. Mulu (BMNH). – Tsuneki, 1980a:9 (in key).

#### 470. *sumbanicola* Tsuneki

*Trypoxylon sumbanicola* Tsuneki, 1979c:50, ♀. Holotype: ♀, Indonesia: Central Sumba: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:8 (in key).

#### 471. *sumbanum* Tsuneki

*Trypoxylon sumbanum* Tsuneki, 1979c:20, ♂. Holotype: ♂, Indonesia: East Sumba: Baing: Wai Lekabe (Basel Mus.). – Tsuneki, 1979c:5, 10 (in key).

**472. *suumi* Tsuneki**

*Trypoxylon suumi* Tsuneki, 1979a:27, ♂. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (BISH). – Tsuneki, 1979a:4 (in key), 1981f:26 (single member of *suumi* species group).

**473. *syriacum* Mercet**

*Trypoxylon syriacum* Mercet, 1906:464, ♀ (as *Syriacum*, incorrect original capitalization). Holotype or syntypes: ♀, Syria: Marache, maybe in today's Lebanon (IEE, Madrid). – Mercet, 1906c:464 (in key to Palearctic species); de Beaumont, 1965a:56 (Greece); R. Bohart and Menke, 1976:348 (listed); Guichard, 1978:271 (Greece); Mochi and Luchetti, 1974:14 (Italy: Lazio); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Antropov *in* Bitsch et al., 2001:381 (in Sphecidae Fauna of Western Europe); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: İspir).

**474. *szechuen* Tsuneki**

*Trypoxylon szechuen* Tsuneki, 1981d:75, ♀. Holotype: ♀, China: Szechuan: Ningyuenfu (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**475. *tadaonis* Tsuneki**

*Trypoxylon tadaonis* Tsuneki, 1980b:25, ♂, ♀. Holotype: ♂, Philippines: Luzon: Los Baños (originally Murota coll., now USNM). – Tsuneki, 1980b:5 (in key), 1981f:43 (member of *flavipes* species group); Tano, 1995:45 (holotype in K. Tsuneki collection).

**476. *tainanense* Strand**

*Trypoxylon tainanense* Strand, 1923:188, ♀. Lectotype: ♀, Taiwan: Tainan (DEI), designated by Oehlke and Wudowenz, 1974:425. – Tsuneki, 1966:2 (in key; as *taiwanense*), 6 (Taiwan; as *taiwanense*); Haneda, 1972a:4 (Taiwan); Tsuneki, 1972c:1 (Taiwan; redescription); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1977j:270 (Taiwan; description of ♂); Tsuneki, 1978a:5 (in key), 73 (redescription; Thailand, Sumba, Sulawesi, Taiwan), 86 (relationships to other species), 1979a:19 (citation), 1980a:16 (Indonesia: Sulawesi), 1981c:12 (citation), 1981f:46 (single member of *tainanense* species group); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon nagamasae* Tsuneki, 1963c:12, ♂. Holotype: ♂, Thailand: Chiang Mai (Sasayama Univ.). Synonymized with *Trypoxylon tainanense* by Tsuneki, 1978a:73. – R. Bohart and Menke, 1976:347 (listed).

**477. *taiwanum* Tsuneki**

*Trypoxylon responsum taiwanum* Tsuneki, 1967d:8, ♀, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Penpuchi (K. Tsuneki coll.). – Tsuneki, 1971g:4 (Taiwan); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1977j:272 (Taiwan). – **As *Trypoxylon regium taiwanum***: Tsuneki, 1978b:66 (new combination). – **As *Trypoxylon taiwanum***: Tsuneki, 1981c:9, 10 (in key), 46 (new status; Taiwan; additional description), 1981f:20 (single member of *taiwanum* species group); Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**478. *takasago* Tsuneki**

? *Trypoxylon formosicola* Strand var. *kankauense* Strand, 1922b:149. Holotype: ♀, Taiwan: Kankau, now Hengchun (DEI). – Oehlke and Wudowenz, 1974:423 (holotype in DEI); R. Bohart and Menke, 1976:346 (listed, as *Trypoxylon formosicola kankauense*); Tsuneki, 1981c:36 (probably a senior synonym of *Trypoxylon takasago*). – **As *Trypoxylon formosicola kankauense***: Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan).

*Trypoxylon takasago* Tsuneki, 1966b:11, ♀. Holotype: ♀, Taiwan: Keeling Shih: Pinglin (K. Tsuneki coll.). – Tsuneki, 1966b:3 (in key), 1968d:55 (Taiwan); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1977c:10 (Taiwan; description of ♂), 1977j:275 (Taiwan; description of ♂), 1981c:8, 10 (in key), 35 (Taiwan; additional description), 1981f:60 (member of *takasago* species group); Wu and Zhou, 1996:104 (revision in Economic Insect Fauna of

China); Yamane, Ikudome, and Terayama, 1999:528 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**ssp. hongkongense Tsuneki**

*Trypoxylon takasago hongkongense* Tsuneki, 1981d:81, ♀. Holotype: ♀, Hong Kong (BISH). – Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**ssp. kumaso Tsuneki**

*Trypoxylon kumaso* Tsuneki, 1966b:12, ♂. Holotype: ♂, Okinawa Island: Nago (BISH). – Tsuneki, 1966b:3 (in key), 1973e:32, 35 (in key). – **As *Trypoxylon takasago kumaso***: 1981c:8, 11 (in key), 37 (Okinawa; new status; additional description; ♀), 1981e:3 (in key), 82 (citation), 1982g:62 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago).

**479. taros Tsuneki**

*Trypoxylon taros* Tsuneki, 1980b:69, ♀. Holotype: ♀, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:7 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**480. tawitawiense Tsuneki**

*Trypoxylon tawitawiense* Tsuneki, 1976b:86, ♂, ♀ (♀ = *Trypoxylon striolatum*). Holotype: ♂, Philippines: Tawi Tawi: Tarawakan (ZMK). – Tsuneki, 1980a:77 (discuss.), 1980b:11, 12 (in key), 117 (Philippines; additional description, ♀), 1981f:69 (member of *tawitawiense* species group).

**481. tekuense Tsuneki**

*Trypoxylon tekuense* Tsuneki, 1979a:75, ♂. Holotype: ♂, Malaya: Pahang: Kuala Teku (BMNH). – Tsuneki, 1979a:9 (in key).

**482. tengmen Tsuneki**

*Trypoxylon tengmen* Tsuneki, 1981c:27, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Pempuchi (coll. T. Nambu). – Tsuneki, 1981c:4, 6 (in key), 1981f:37 (member of *pacificum* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**483. tengu Tsuneki**

*Trypoxylon tengu* Tsuneki, 1981a:42, ♀. Holotype: ♀, New Guinea: Morobe District: Busu River 60 km E Lae (AEI). – Tsuneki, 1981a:5 (in key).

**484. terbakarinum Tsuneki**

*Trypoxylon terbakarinum* Tsuneki, 1979a:137, ♀. Holotype: ♀, Malaya: Pahang: Cameron's Highland (BMNH). – Tsuneki, 1979a:14 (in key).

**485. testaceicorne Cameron**

*Trypoxylon testaceicorne* Cameron, 1907a:1009, ♀. Holotype: ♀, India: Gujarat: Deesa (BMNH). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1978b:57 (redescription), 77 (in key), 1979a:5 (in key), 43 (redescription), 1981d:19 (in key), 22 (India), 1981f:34 (single member of *testaceicorne* species group).

*Trypoxylon basiflavum* Tsuneki, 1979b:11, ♂, ♀. Holotype: ♂, Sri Lanka: Trincomalee (USNM). Synonymized with *Trypoxylon testaceicorne* by Tsuneki, 1980a:2. – Tsuneki, 1979b:4 (in key); Nuhn and Menke, 1994:25 (holotype in USNM).

**486. testaceipes Arnold**

*Trypoxylon testaceipes* Arnold, 1924:18, ♀, ♂. Syntypes: Zimbabwe: Bulawayo (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:315 (member of *figulus* species group); Leclercq, 1965a:82 (in

key), 102 (revision, Zaire); R. Bohart and Menke, 1976:348 (listed); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

**487. *thai anum* Tsuneki**

*Trypoxylon thai anum* Tsuneki, 1961b:384, ♀. Holotype: ♀, Thailand: Li (Osaka). – Tsuneki, 1974b:629 (Thailand), 1976b:75 (Philippines; redescription); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1978a:6, 7 (in key), 86 (relationships to other species), 1979a:19 (citation), 1979b:3 (in key), 6 (Sri Lanka), 1979c:11 (citation), 1981d:2 (Sri Lanka), 18 (in key), 1981f:47 (member of *scutatum* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Takahashi 1993:3 (Japan: Hachijo-Jima Island); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan).

**ssp. *ambonense* Tsuneki**

*Trypoxylon thai anum ambonense* Tsuneki, 1978a:62, ♀, ♂. Holotype: ♂, Indonesia: Ambon Island: Waai (CAS). – Tsuneki, 1978a:7 (in key), 1980a:15 (Indonesia: Ambon Island); Pulawski, 1994:27 (CAS holotype no. 13705).

**ssp. *borneoense* Tsuneki**

*Trypoxylon thai anum borneoense* Tsuneki, 1978a:62, ♀, ♂. Holotype: ♂, North Borneo: Tawau, Quoin Hill (BISH). – Tsuneki, 1978a:7 (in key), 1980a:16 (Sarawak; additional description).

**ssp. *dubiosum* Tsuneki**

*Trypoxylon dubiosum* Tsuneki, 1964b:4, ♀, ♂. Holotype: ♂, Japan: Shimmura (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1966b:2 (in key), 6 (Ryukyu Islands: Amami-Oshima Islands; redescription), 1969e:25 (Japan); Murota, 1973a:101 (Ryukyu Islands: Amami-Oshima Islands); Tsuneki, 1973e:32, 35 (in key); Tano, 1994b:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon thai anum dubiosum***: Tsuneki, 1978a:7 (in key), 49 and 62 (new status), 1981c:3 (in key), 12 (Taiwan: citation), 1981e:3 (in key), 9 (citation), 1982g:60 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Tano, 1994a:6 (holotype in K. Tsuneki collection).

**ssp. *philippinicum* Tsuneki**

*Trypoxylon thai anum philippinicum* Tsuneki, 1978a:62, ♀, ♂. Holotype: ♂, Philippines: Luzon: Albany Province: Libon Caguscus (BISH). – Tsuneki, 1978a:7 (in key), 1980b:4 (in key), 13 (Philippines), 1981d:69 (Philippines: Luzon).

**488. *timberlakei* Sandhouse**

*Trypoxylon timberlakei* Sandhouse, 1940:169, ♀. Holotype: ♀, USA: California: 3 mi E Hesperia (USNM). – Krombein in Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:348 (listed); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Coville, 1990:2 (may be a complex of species).

**489. *tirimen* Tsuneki**

*Trypoxylon tirimen* Tsuneki, 1980a:46, ♀. Holotype: ♀, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:7 (in key).

**490. *tjangkoedang* Tsuneki**

*Trypoxylon tjangkoedang* Tsuneki, 1979c:26, ♀. Holotype: ♀, Indonesia: West Java: Djampang Area: Mt. Tjankoe-dang (RMNH). – Tsuneki, 1979c:5 (in key).

**491. *tjiansanum* Tsuneki**

*Trypoxylon tjiansanum* Tsuneki, 1979c:55, ♀. Holotype: ♀, Indonesia: West Java: Middle Djampang: Tjiansana (RMNH). – Tsuneki, 1979c:9 (in key).

**492. *tobiasi* Antropov**

*Trypoxylon tobiassi* Antropov, 1989b:309, ♂. Holotype: Armenia: 35 km N Nakhichevan (ZIL).

**493. *toltecum* de Saussure**

*Trypoxylon toltecum* de Saussure, 1867:83, ♀. Syntypes: ♀, Mexico: Veracruz: Orizaba (NHMW or MHNG). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Cameron, 1889a:48 (listed); Dalla Torre, 1897:709 (in catalog of world Hymenoptera, as *toliticum*); Richards, 1934:314 (not examined); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**494. *tomi* Tsuneki**

*Trypoxylon tomi* Tsuneki, 1979a:80, ♀. Holotype: ♀, Singapore (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM).

**495. *townesi* Tsuneki**

*Trypoxylon townesi* Tsuneki, 1981a:72, ♀. Holotype: ♀, New Guinea: Morobe Province: Bulolo (AEI). – Tsuneki, 1981a:8 (in key).

**496. *townesorum* Tsuneki**

*Trypoxylon townesorum* Tsuneki, 1980b:15, ♀. Holotype: ♀, Philippines: Luzon: Mountain Province: Kias area (AEI). – Tsuneki, 1980b:4 (in key).

**497. *tremulum* Arnold**

*Trypoxylon tremulum* Arnold, 1946:65, ♀. Holotype: ♀, Malawi: Zomba (SAM). – R. Bohart and Menke, 1976:348 (listed).

**498. *triangulum* Tsuneki**

*Trypoxylon triangulum* Tsuneki, 1981d:3, ♀. Holotype: ♀, Sri Lanka: Sabaragamuwa Province: Kegalla District: Kitulgala: Bandarakele Jungle (USNM). – Tsuneki, 1981d:18 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**499. *trigeminum* Richards**

*Trypoxylon trigeminum* Richards, 1934:311, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**500. *trinidadense* Richards**

*Trypoxylon trinidadense* Richards, 1934:292, ♀. Holotype: ♀, Trinidad: 7 mi NW Moruga village (USNM). Paratype: Paraguay. – Vesey-FitzGerald, 1936:114 (not collected by the author), 1938:191 (Trinidad); R. Bohart and Menke, 1976:348 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**501. *triste* Arnold**

*Trypoxylon triste* Arnold, 1924:24, ♂ (as *triste*, incorrect original termination). Holotype: ♂, Zimbabwe: Sawmills (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:98 (in key), 126 (citation); R. Bohart and Menke, 1976:348 (listed); Hancock, Chahwanda, and Mhlanga, 1995:40 (paratype in Bulawayo Museum).

**502. *trituberculatum* Tsuneki**

*Trypoxylon trituberculatum* Tsuneki, 1980b:111, ♂, ♀. Holotype: ♂, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:11 (in key), 1981d:69 (Philippines: Luzon), 1981f:68 (single member of *trituberculatum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

**503. *trochanteratum* Cameron**



*Trypoxylon trochanteratum* Cameron, 1902f:313, ♀. Lectotype: ♀, India: Assam: Khasia Hills (BMNH), designated by Tsuneki, 1978b:47. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1978b:47 (redescription), 77 (in key), 1979a:5 (in key), 40 (comments), 1981d:33 (Burma; additional description), 61 (in key), 1981e:50 (relationship to *Trypoxylon pacificum*).

#### 504. *truncatum* Tsuneki

*Trypoxylon truncatum* Tsuneki, 1979a:43, ♂, ♀. Holotype: ♂, Laos: Vientiane Province: Gi Sion Vill. de Tha Ngone (BISH). – Tsuneki, 1979a:5, 6 (in key), 1981d:41 (in key), 1981f:29 (single member of *truncatum* species group).

#### 505. *tuberculifrons* Arnold

*Trypoxylon tuberculifrons* Arnold, 1945:8, ♀. Holotype: ♀, Madagascar: Rogez (MNHN). – R. Bohart and Menke, 1976:348 (listed); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae).

#### 506. *turbulentum* Arnold

*Trypoxylon turbulentum* Arnold, 1946:75, ♂, ♀. Holotype: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:94 (in key), 119 (revision; Zaire); R. Bohart and Menke, 1976:348 (listed, as *tubulentum*); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntype in Bulawayo Museum).

#### 507. *turkestanicum* Gussakovskij

*Trypoxylon turkestanicum* Gussakovskij, 1936:656, ♀, ♂. Syntypes: Uzbekistan: Tashkent, Osh (ZIL). – R. Bohart and Menke, 1976:348 (listed); Kazenas, 1978b:146, 147 (in key to Sphecidae of Kazakhstan and Central Asia); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia).

#### 508. *undatum* Tsuneki

*Trypoxylon undatum* Tsuneki, 1979a:47, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:6, 8 (in key).

#### 509. *unguicorne* Richards

*Trypoxylon unguicorne* Richards, 1934:283, ♂. Holotype: ♂, Bolivia: no specific locality (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 510. *urbanii* Tsuneki

*Trypoxylon urbanii* Tsuneki, 1979c:55, ♀. Holotype: ♀, Indonesia: East Sumba: Central District: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:6 (in key), 1980a:2 (may be a geographic race of *Trypoxylon mindanaonis*).

#### 511. *urichi* Richards

*Trypoxylon urichi* Richards, 1934:302, ♂. Holotype: ♂, Trinidad: Maracas Falls (USNM). Paratypes: Panama. – Richards, 1936b:458 (♀); Vesey-FitzGerald, 1936:114 (not collected by the author), 1938:191 (Trinidad); R. Bohart and Menke, 1976:348 (listed); Callan, 1991a:8 (Trinidad); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

#### 512. *ussuriense* Kazenas

*Trypoxylon ussuriense* Kazenas, 1980e:91, ♀. Holotype: ♀, Russia: Primorskiy Kray: Anisimovka (ZIL). – Antropov, 1986a:87 (Russia: Primorskiy Kray, description of ♂); Antropov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:168 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve).

#### 513. *vardyi* Tsuneki

*Trypoxylon vardyi* Tsuneki, 1979a:145, ♂, ♀. Holotype: n. India: Kangra Valley (BMNH). – Tsuneki, 1979a:13, 15 (in key), 1979c:9 (in key), 56 (Indonesia: Java, Sumatra), 1981f:65 (member of *vardyi* species group).

#### 514. *varicolor* Tsuneki

*Trypoxylon varicolor* Tsuneki, 1980b:63, ♀, ♂. Holotype: ♀, Philippines: Mindanao: Butuan (USNM). – Tsuneki, 1980b:7 (in key), 1981f:52 (single member of *varicolor* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

#### 515. *varipes* Pérez

*Trypoxylon varipes* Pérez, 1905a:157, ♀. Syntypes: ♀, Japan: no specific locality but presumably Tokyo area (MNHN). – Pérez, 1905a:26 (listed); nec Gussakovskij, 1932:12 and 1936:664 (= *Trypoxylon koreanum*); Tsuneki, 1956g:6, 11 (in key), 30 (redescription); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tsuneki, 1964c:10 (Japan: Kyushu); Prefecture); Nambu, 1966:25-34 (nesting habits); Haneda, 1968a:44 (Japan); T. Iida, 1968:21 (Japan); Minamikawa, 1968:45 (nesting in walls of wooden temple at Higashi Murayama City, Tokyo Province); Tano, 1968:32 (Japan); Tsuneki, 1969i:59 (Japan: Fukui Prefecture: Taichôdzi temple); Nambu, 1972d:8 (list of spider prey), 1973d:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 38 (in key); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1981e:4, 5 (in key), 36 (Japan; redescription), 1981f:35 (member of *varipes* species group); Nemkov, 1986:100 (Russia: Siberia: Irkutsk Oblast: Irkutsk); Tsuneki, 1986:30 (Ryukyu archipelago); Antropov, 1995c:124 (synonymy, diagnostic characters); Nemkov, 1998c:685 (in supplementary key to Russian Far East *Trypoxylon*); Yamane, Ikudome, and Tera-yama, 1999:528 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Ohl and Linde, 2003:151 (number of ovarioles); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

*Trypoxylon monticola* Tsuneki, 1956g:34, ♀, ♂. Holotype: ♀, Japan: Nikko: Senjugahama (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Trypoxylon varipes* by Antropov, 1995c:124. – Tsuneki, 1956g:7, 11 (in key); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); T. Iida, 1968:21 (Japan); Nambu, 1973d:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:35, 37 (in key); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (listed); Tsuneki, 1981e:5 (in key), 51 (Japan; additional description), 1981f:37 (member of *pacificum* species group); Antropov, 1986a:90 (Russia: Primorskiy Krai); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov in Nemkov, Kazenas, Budrys, et Antropov, 1995:421 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:21 (holotype transferred to Hyogo Mus.).

*Trypoxylon varipes nasutum* Tsuneki, 1974a:365, ♀. Holotype: ♀, Korea: 27 km NE Kaesong, Mts. Pakyon (TMB). Synonymized with *Trypoxylon varipes* by Antropov, 1995c:124. – R. Bohart and Menke, 1976:630 (listed); Tsuneki, 1981e:4 (in key), 38 (Korea; comments), 1982b:16 (known from Korea; erroneously placed in *Pison*).

*Trypoxylon varipes nasutum* Tsuneki, 1991:200, as new subspecies. Nomen nudum.

#### 516. *varipiloides* Tsuneki

*Trypoxylon varipiloides* Tsuneki, 1980a:65, ♀, ♂. Holotype: ♀, Sarawak: Mt. Mulu (BMNH). – Tsuneki, 1980a:9 (in key), 1980b:7 (in key), 55 (Philippines), 1981f:19 (single member of *varipiloides* species group).

#### 517. *varipilosum* Cameron

*Trypoxylon varipilosum* Cameron, 1901a:28, ♀. Holotype or syntypes: ♀, Singapore (BMNH). – Richards, 1934:315 (member of *figulus* species group); R. Bohart and Menke, 1976:348 (listed); Tsuneki, 1978b:44 (redescription), 78 (in key), 1979a:11 (in key), 91 (redescription), 1980a:9 (in key), 64 (redescription), 1980b:7, 9 (in key), 60 (Philippines; additional description).

*Trypoxylon aureohirtum* Tsuneki, 1976b:77, ♀. Holotype: ♀, Philippines: Palawan: Pinigisan (ZMK). Synonymized with *Trypoxylon varipilosum* by Tsuneki, 1980a:2.

As *Trypoxylon khasiae* (corrected to *Trypoxylon varipilosum* by Tsuneki, 1980a:2 and 64): Tsuneki, 1979a:84 (Malayan specimens only), 1979c:7, 8, 9 (in key), 36 (Indonesia: Java, Sumatra), 1980a:2 (*Trypoxylon varipilosum* possibly is a geographic form of *khasiae*).

**518. varipunctatum Tsuneki**

*Trypoxylon varipunctatum* Tsuneki, 1980b:54, ♀. Holotype: ♀, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:7 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**ssp. kiashi Tsuneki**

*Trypoxylon varipunctatum kiashi* Tsuneki, 1980b:55, ♀. Holotype: ♀, Philippines: Basilan Island: no specific locality (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM).

**519. vechti Tsuneki**

*Trypoxylon vechti* Tsuneki, 1979c:22, ♂, ♀. Holotype: ♂, Indonesia: West Java: Mt. Gedeh: Poentjak (RMNH). – Tsuneki, 1979c:5 (in key), 1981f:34 (member of *vechti* species group).

**520. venaticum Tsuneki**

*Trypoxylon venaticum* Tsuneki, 1980a:69, ♀. Holotype: ♀, Sarawak: Mt. Mulu (BMNH). – Tsuneki, 1980a:9 (in key).

**521. vicinum Tsuneki**

*Trypoxylon vicinum* Tsuneki, 1979c:15, ♀, ♂. Holotype: ♀, Indonesia: West Java: Mt. Gedeh: Tapas (RMNH). – Tsuneki, 1979c:4, 6, 10 (in key), 1980a:2 and 24 (as *Trypoxylon laeviceps vicinum*, new status), 1980b:5, 6 (in key), 38 (raised to full species status; additional description), 1981f:23 (member of *appendiculatum* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

**522. viduum Arnold**

*Trypoxylon viduum* Arnold, 1951:79, ♂. Holotype: ♂, Ethiopia: Jowaha N Debra Sina (BMNH). – Leclercq, 1965a:96 (in key), 123 (revision); R. Bohart and Menke, 1976:348 (listed).

**523. vientianense Tsuneki**

*Trypoxylon vientianensis* Tsuneki, 1979a:141, ♂, incorrect original termination. Holotype: ♂, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:15 18 (in key), 1981f:61 (member of *kepongianum* species group).

**524. viridaricola Tsuneki**

*Trypoxylon viridaricola* Tsuneki, 1979c:65, ♂. Holotype: ♀, Indonesia: West Java: Bogor: Dramaga (RMNH). – Tsuneki, 1979c:11 (in key), 1981f:74 (single member of *viridaricola* species group).

**525. volitans Arnold**

*Trypoxylon volitans* Arnold, 1956:71, ♂. Holotype: ♂, Uganda: Jinja (SAM). – Leclercq, 1965a:93 (in key), 118 (revision); R. Bohart and Menke, 1976:348 (listed).

**526. wallacei Tsuneki**

As *Trypoxylon ferox*: Tsuneki, 1978b:13, corrected to *Trypoxylon wallacei* by Tsuneki, 1980a:2 and 40.

*Trypoxylon wallacei* Tsuneki, 1980a:40, ♂. Holotype: ♂, Indonesia: Sulawesi: Makassar (OXUM). – Tsuneki, 1980a:6 (in key), 1981f:48 (member of *apicatum* species group).

**527. walshae Tsuneki**

*Trypoxylon walshae* Tsuneki, 1979c:67, ♀, ♂. Holotype: ♀, Indonesia: Kangean Island: Petapan (RMNH). – Tsuneki, 1979c:4, 6, 10 (in key).

**528. warisum Tsuneki**

*Trypoxylon warisum* Tsuneki, 1981a:33, ♂, ♀. Holotype: ♂, New Guinea: West Irian: Waris S Hoolandia (BISH). – Tsuneki, 1981a:6 (in key), 1981f:20 (one of 3 members of *angoramum* species group).

**529. wauense Tsuneki**

*Trypoxylon wauense* Tsuneki, 1981a:62, ♀. Holotype: ♀, Papua New Guinea: Morobe Province: Wau (BISH). – Tsuneki, 1981a:8 (in key).

**530. *wegneri* Tsuneki**

*Trypoxylon wegneri* Tsuneki, 1980a:106, ♀. Holotype: ♀, Indonesia: Moluccas: Ambon Island: Waai (CAS). – Tsuneki, 1980a:14 (in key); Pulawski, 1994:27 (CAS holotype no. 13706).

**531. *wheeleri* Richards**

*Trypoxylon wheeleri* Richards, 1936b:459, ♀. Holotype: ♀, Panama: Ancon (BMNH). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**532. *williamsi* Tsuneki**

*Trypoxylon williamsi* Tsuneki, 1980b:61, ♀. Holotype: ♀, Philippines: Luzon: Mt. Makiling (USNM). – Tsuneki, 1980b:7 (in key); Nuhn and Menke, 1994:26 (holotype in USNM).

**533. *winthemi* Richards**

*Trypoxylon winthemi* Richards, 1934:335, ♂. Holotype: ♂, Brazil: no specific locality (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**534. *xenophon* Richards**

*Trypoxylon xenophon* Richards, 1934:♀. Holotype: ♀, Panama: Portobello (USNM). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**535. *yanoi* Tsuneki**

*Trypoxylon yanoi* Tsuneki, 1980a:92, ♀. Holotype: ♀, North Borneo: Forest Camp 19 km N Kalabakan (BISH). – Tsuneki, 1980a:11, 12 (in key).

**536. *yebissum* Tsuneki**

*Trypoxylon yebissum* Tsuneki, 1979a:167, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:17 (in key), 1981f:60 (member of *takasago* species group).

**537. *yogator* Tsuneki**

*Trypoxylon yogator* Tsuneki, 1979a:142, ♂. Holotype: ♂, India: Matheran (BMNH). – Tsuneki, 1979a:15 (in key), 1981f:22 (single member of *yogator* species group).

**538. *yoshimotoi* Tsuneki**

*Trypoxylon yoshimotoi* Tsuneki, 1981c:52, ♀. Holotype: ♀, Taiwan: Pingtung Prefecture: Hengchun (BISH). – Tsuneki, 1981c:9 (in key); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

**539. *yumi* Tsuneki**

*Trypoxylon yumi* Tsuneki, 1979a:81, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (BISH). – Tsuneki, 1979a:11 (in key), 1980a:2 (*Trypoxylon yumi* possibly is a geographic form of *khasiae*), 1981f:58 (member of *coloratum* species group).

**540. *zika* Arnold**

*Trypoxylon zika* Arnold, 1956:72, ♀. Holotype: ♀, Uganda: Zika Forest 6 mi N Entebbe (SAM). – Leclercq, 1965a:90 (in key), 115 (citation); R. Bohart and Menke, 1976:348 (listed).

**541. *zurki* Leclercq**

*Trypoxylon zurki* Leclercq, 1965a:115, ♀. Holotype: ♀, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:911 (in key to African *Trypoxylon*; R. Bohart and Menke, 1976:348 (listed)).

**Subgenus *Trypargilum*****542. *aestivale* Richards**

*Trypoxylon aestivale* Richards, 1934:222, ♂, ♀. Holotype: ♂, Brazil: Rio Grande do Sul: Rio Grande do Sul (NHMW). – R. Bohart and Menke, 1976:348 (listed); Coville, 1982b:43 (revision; s. Mexico to Brazil); Dollfuss, 1989:13 (type material in NHMW); Camillo, 1999:33 (nesting behavior); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

#### 543. *agamemnon* Richards

*Trypoxylon agamemnon* Richards, 1934:261, ♂. Holotype: ♂, Panama: Tabernilla (USNM). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 544. *albitarse* Fabricius

*Trypoxylon albitarse* Fabricius, 1804:180, ♀. Lectotype: ♀, South America: no specific locality (LUND), designated by van der Vecht, 1961a:25. – Palisot de Beauvois, 1811:115 (United States: Philadelphia and Virginia); Lepeletier and Serville, 1828:750 (listed); Dahlbom, 1844:286 (in revision of Sphecidae and Pompilidae), 1845:509 (in key); Lepeletier de Saint Fargeau, 1845:228 (revision); F. Smith, 1856:379 (listed); Cresson, 1862:234 (in catalog of North American Hymenoptera); A. Costa, 1864a:61 (three specimens from Mexico in Napoli Museum); nec Belke, 1866 (= *Trypoxylon figulus*); Taschenberg, 1875:371 (diagnostic characters); de Saussure, 1867:76 (North America, Mexico; redescription); Sörensen, 1884:15 (nesting habits); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Cameron, 1889a:40 (Mexico and Central America); W. Fox, 1891c:138 (in revision of North American *Trypoxylon*); Viereck, 1893e:132 (New Jersey: Del. Water Gap); W. Fox, 1894a:501 (in revision of North American Larrinae); C. Turner, 1912:353 (experiments about reaction to light, as *albotarsus*); Rohwer, 1916b:686 (in catalog of W. Fox, 1894a:474 (in revision of North American Larrinae), 1895c:267 (Mexico: Baja California Sur); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); du Buysson, 1898:84 (nest and larva); Holmberg, 1903:469 (Argentina, Paraguay); Cameron, 1912a:438 (Guiana); Rohwer, 1912:473 (interpretation of name and synonyms); Rau and Rau, 1913:401 (feeding larva with additional food supply), 1916:31 (nest and prey); Bodkin, 1918:317 (British Guiana, mud nest); Campos, 1922:64 (Ecuador: eight localities); Bristowe, 1925a:480 (nest and prey); Osborne, 1929:751 (nesting behavior); R. Bohart and Menke, 1976:348 (listed); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection); Maes, 1989:101 (in catalog of Nicaraguan Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 1993:19 (ne. Brazil); Araújo, Pompolo, Dergam, and Campos, 2000:7 (B chromosome system); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Araújo, Silva, Pompolo, Perfectti, and Camacho, 2002 (variation in genetic load caused by differences in short (= heterochromatic) arm of chromosome 14); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Rocha-Sanchez and Pompolo, 2004:398 (integration of B chromosome); Peruquetti, 2005:84 (nesting in trap nests); Martins, Serrão, and Schmidt, 2005:121 (spermatheca long, coiled, with narrow reservoir); Araújo, Pompolo, Perfectti, and Camacho, 2002:1475 (integration of a B chromosome into the A genome); Buys, 2005a:696 (description of larva). – Nec Du Buysson, 1898:353 (= *Trypoxylon mexicanum*) and the following authors (= *Trypoxylon politum*): Walsh and Riley, 1869:133; W. Fox, 1891:136, 1893:472; Howard, 1904:pl.6, fig.6; H. Smith, 1908b:352; Rau and Rau, 1913:401, 1916:27; Richards, 1934:218. – **As *Apius albitarse***: Jurine, 1807:142 (listed).

*Trypoxylon palliditarse* de Saussure, 1867:77, ♀, ♂. Syntypes: Brazil: no specific locality; Argentina: Entre Ríos: no specific locality (NHMW). Synonymized with *Trypoxylon albitarse* by van der Vecht, 1961a:25. – Holmberg, 1884:218 (Uruguay); Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889a:48 (Mexico, redescription); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); W. Fox, 1897b:383 (Brazil: Pará: Santarém; as *pallitarse*); Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Cameron, 1912a:438 (Guiana); Rohwer, 1912:473 (unrecognizable species); Schrottky, 1913a:228 (Argentina, Paraguay, Uruguay); Bruch, 1932a:49 and 1932b:174 (nesting habits); Gemignani, 1933:309 (redescription); Richards, 1934:213 (revision), 351 (life history summary); Vesey Fitzgerald, 1936:111 (Trinidad: nest, male guarding nest, immature stages); Bischoff and von Schulthess, 1937:169 (Argentina: San José); Freeman, 1981b:563 (population dynamics in Trinidad).

*Trypoxylon rostratum* Taschenberg, 1875:371, ♀. Syntypes: ♀, Brazil: no specific locality (Halle). Synonymized with *Trypoxylon pallidotarse* by Kohl, 1885a:205, Gemignani, 1933:310, and Richards, 1934:213. – Schrottky, 1910b:70 (description of ♂); Strand, 1910a:169 (Paraguay); Bertoni, 1911:134 (nest and prey); Strand, 1912:287 (nest structure); Schrottky, 1913a:228 (Argentina, Paraguay).

*Trypoxylon leucotrichium* Rohwer, 1912:477, ♂, ♀. Holotype: sex not indicated, Peru: Chanchamayo (USNM). Synonymized with *Trypoxylon pallidotarse* by Richards, 1934:213. – Rohwer, 1912:478 (in key); nec F. Williams, 1928a:351 (= *Trypoxylon buchwaldi*); Rau, 1933:157 (Panama: Barro Colorado Island: nest), 1935b (*Trypoxylon leucotrichium* is a synonym of *T. pallidotarse* de Saussure).

#### 545. *albonigrum* Richards

*Trypoxylon albonigrum* Richards, 1934:225, ♂. Holotype: ♂, Brazil: Blumenau (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 546. *alleni* Richards

*Trypoxylon alleni* Richards, 1934:259, ♂. Holotype: ♂, Colombia: Chiriguana District: Lake Sapatoza area (BMNH). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 547. *anapaike* Amarante

*Trypoxylon anapaike* Amarante, 1991:431, ♀. Holotype: ♀, Surinam: Marowije : Anapaike (Mus. Zool. Univ. São Paulo). – Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 548. *annulatum* Brèthes

*Trypoxylon annulatum* Brèthes, 1913:156, ♀. Syntypes: ♀, Argentina: Misiones: no specific locality (MACN). – Richards, 1934:249 (member of *nitidum* species group); Gemignani, 1940:438 (redescription of type); R. Bohart and Menke, 1976:348 (listed); Genise, 1990:27 (type material in MACN); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 549. *antropovi* Coville

*Trypoxylon* sp. near *palliditarsus*: Rau, 1943:650 (nest, natural enemies), corrected to *Trypoxylon giganteum* by Coville, 1982b:37.

*Trypoxylon giganteum* Coville, 1982b:37, ♀, ♂, junior primary homonym of *Trypoxylon giganteum* Tsuneki, 1980. Holotype: ♂, Mexico: Chiapas: El Zapotal 2 mi. S Tuxtla Gutierrez (CAS). – Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

*Trypoxylon antropovi* Coville, 1985:267. Substitute name for *Trypoxylon giganteum* Coville, 1982. – Camillo, 1999:30 (nesting behavior). – Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 550. *apicipenne* Cameron

*Trypoxylon apicipenne* Cameron, 1889a:44, ♀. Holotype: ♀, Mexico: Yucatan: Temax (BMNH). – Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Richards, 1934:234 (revision); R. Bohart and Menke, 1976:348 (listed); Coville, 1982b:83 (revision, s. Arizona and Mexico); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Pitts and Parker, 2005:62 (nest parasite: mutillid *Sphaerophthalma jacala* Schuster).

*Trypoxylon bicalcaratum* Richards, 1934:235, ♂. Holotype: ♂, Mexico: no specific locality (USNM). Synonymized with *Trypoxylon apicipenne* by Coville, 1982b:83. – R. Bohart and Menke, 1976:348 (listed); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – *As Trypargilum bicalcaratum*: Krombein in Krombein et al., 1979:1645 (listed).

#### 551. *armatum* Taschenberg

*Trypoxylon armatum* Taschenberg, 1875:373, ♂. Holotype: ♂, Venezuela: no specific locality (Halle). – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Richards, 1934:244 (revision); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 552. *atkinsoni* Richards

*Trypoxylon atkinsoni* Richards, 1934:225, ♂. Holotype: ♂, Colombia: Cincinnati (USNM). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

As *Trypoxylon niveitarse*: Rau, 1933:156 (Panama: Barro Colorado, nest), corrected to *Trypoxylon atkinsoni* by Rau, 1935b:188

#### 553. *aureovestitum* Taschenberg

*Trypoxylon aureovestitum* Taschenberg, 1875:376, ♂. Syntypes: ♂, Argentina: Mendoza: Mendoza (Halle). – Holmberg, 1884:218 (Uruguay); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Holmberg, 1903:469 (Argentina, Paraguay); Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Jörgensen, 1912:293 (Argentina: Mendoza Province); Schrottky, 1913a:228 (Argentina, Paraguay, Uruguay); Richards, 1934:253 (revision); Bischoff and von Schulthess, 1937:170 (Argentina: Lapango); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

*Trypoxylon tucumanum* Brèthes, 1913:153, ♀. Holotype: ♀, Argentina: Tucumán (MACN). Tentatively synonymized with *Trypoxylon aureovestitum* by Richards, 1934:253, definitely synonymized by Gemignani, 1940:436. – Gemignani, 1940:436 (redescription of type); Genise, 1990:27 (type material in MACN); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 554. *aurifrons* Shuckard

*Trypoxylon aurifrons* Shuckard, 1837a:117, ♂. Holotype: ♂: origin doubtful, probably not British (BMNH). – Dahlbom, 1844:284 (in revision of Sphecidae and Pompilidae); F. Smith, 1856:379 (listed); A. Costa, 1864a:61 (one specimens from Brazil in Napoli Museum); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Bertoni, 1911:134 (nest and prey); Richards, 1934:275 (revision); R. Bohart and Menke, 1976:348 (listed); Amarante, 1993:19 (ne. Brazil); D. Baker, 1998:172 (type origin and depository); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

*Trypoxylon ornatum* F. Smith, 1856:380, ♀. Holotype or syntypes: ♀, Brazil: no specific locality (BMNH). Synonymized with *Trypoxylon aurifrons* by Richards, 1934:275. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); W. Fox, 1899:200 (Brazil: São Paulo); Bertoni, 1911:134 (nest and prey); Schrottky, 1913a:228 (Paraguay); Campos, 1922:64 (Ecuador: Durán, El Salado, Guayaquil, identification tentative).

*Trypoxylon latioratum* Cameron, 1912a:438, ♀. Holotype or syntypes: ♀, Guyana: Demerara: no specific locality (BMNH). Synonymized with *Trypoxylon aurifrons* by Richards, 1934:275.

#### 555. *barticense* Richards

*Trypoxylon barticense* Richards, 1934:222, ♂. Holotype: ♂, Guyana: Bartica (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

#### 556. *bensoni* Richards

*Trypoxylon bensoni* Richards, 1934:246, ♂. Holotype: ♂, Nicaragua: no specific locality (BMNH). – R. Bohart and Menke, 1976:348 (listed).

#### 557. *bogotense* Richards

*Trypoxylon bogotense* Richards, 1934:263, ♀. Holotype: ♀, Colombia: Bogota (MNHU). Paratype: Peru. – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**558. *brethesi* Gemignani**

*Trypoxylon brethesi* Gemignani, 1941:42, ♂ (as *Brethesi*, incorrect original capitalization). Holotype: ♂, Argentina: La Rioja: no specific locality (MACN). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**559. *bryanti* Richards**

*Trypoxylon bryanti* Richards, 1934:216, ♂. Holotype: ♂, Argentina: "Riv. San Javier, Santa Fe, Estacion la Noria" (BMNH). Paratype: Brazil. – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**560. *buchwaldi* Richards**

As *Trypoxylon leucotrichum*: F. Williams, 1928a:153 (nests on rock), corrected to *Trypoxylon buchwaldi* by Richards, 1934:351.

*Trypoxylon buchwaldi* Richards, 1934:215, ♂, ♀. Holotype: ♂, Ecuador: Guayaquil (NHMW). – R. Bohart and Menke, 1976:348 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**561. *busckii* Richards**

As *Trypoxylon* sp. No. 7373: Rau, 1933:158 (Panama: Barro Colorado, ...), corrected to *Trypoxylon busckii* by Rau, 1935b:188.

*Trypoxylon busckii* Richards, 1934:221, ♂. Holotype: ♂, Panama: Tabernilla (USNM). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

**562. *californicum* de Saussure**

*Trypoxylon californicum* de Saussure, 1867:78, "♀", but actually ♂. Holotype or syntypes: ♂, USA: California: no specific locality (MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); W. Fox, 1891c:148 (unidentified species), 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:277 (probably a synonym of *Trypoxylon nitidum*); Sandhouse, 1940:141 (revision); Krombein in Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:348 (listed); Coville, 1982b:941 (revision; n. Mexico to Washington); Ruiz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – As *Trypargilum californicum*: Krombein in Krombein and Burks, 1967:395 (new combination, listed); Krombein, 1979b:1645 (in catalog of North American Hymenoptera).

*Trypoxylon sonorensis* Cameron, 1889a:45, ♀, ♂. Lectotype: ♀, Mexico: n. Sonora: no specific locality (BMNH), designated by Richards, 1934:241. Synonymized with *Trypoxylon californicum* by Coville, 1982b:94. – Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:241 (revision); R. Bohart and Menke, 1976:349 (listed); Ruiz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

*Trypoxylon arizonense* W. Fox, 1891c:145, ♀. Lectotype: ♀, USA: Arizona: no specific locality (ANSP), designated by Cresson, 1928:52. Synonymized with *Trypargilum californicum* by Coville in Krombein, 1979b:1645. – W. Fox, 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Rohwer, 1917a:246 (California: Calaveras County); Mickel, 1918a:329 (description of ♂); Richards, 1934:240 (revision); Sandhouse, 1940:140 (revision); Krombein in Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); Muma, 1952:23 (allotype in UNL); Evans, 1957b:92 (larva); Matthews and Matthews, 1968:285 (nesting behavior, prey preference, cocoon structure); R. Bohart and Menke, 1976:348 (listed); Ohl and



Linde, 2003:151 (number of ovarioles). – **As *Trypargilum arizonense***: Krombein *in* Krombein and Burks, 1967:395 (new combination, listed); Matthews and Matthews, 1968:285 (life history).

*Trypoxylon campaspe* Richards, 1934:239, ♀. Holotype: ♀, Mexico: Nogales (USNM), synonymized with *Trypoxylon californicum* by Coville, 1982b:94. – R. Bohart and Menke, 1976:348 (listed); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 563. *cariniceps* Richards

*Trypoxylon cariniceps* Richards, 1934:226, ♀. Holotype: ♀, Bolivia: Coroico (MNHU). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### 564. *carinifrons* Cameron

*Trypoxylon carinifrons* Cameron, 1889a:41, ♀. Holotype or syntypes: ♀, Mexico: Veracruz: Atoyac (BMNH). – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:230 (revision); R. Bohart and Menke, 1976:348 (listed); Coville, 1982b:30 (revision; Mexico to Costa Rica); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 565. *chichenitzae* Coville

*Trypoxylon chichenitzae* Coville, 1982b:85, ♂, ♀. Holotype: ♂, Mexico: Yucatan: Chichen Itza (BMNH). – Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 566. *clavatum* Say

*Trypoxylon clavatum* Say, 1837:374, ♀, ♂ (as *clavatus*, incorrect original termination). Syntypes: USA: no specific locality (lost). – F. Smith, 1856:381 (listed); Le Conte, 1859b:756 (original description copied); Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:414 (revision); de Saussure, 1867:79 (eastern North America, redescription); Cresson, 1873:226 (Texas); Provancher, 1882:135 and 1883:670 (in revision of Canadian Hymenoptera); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1891c:140 (in revision of North American *Trypoxylon*), 1893:474 (...), 1894a:474 (in revision of North American Larrinae); Ashmead, 1894:45 (...); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: Baldwin); nec Faull, 1913:385 (= *Trypoxylon frigidum*); Rau and Rau, 1916:33 and 41 (life history); Rohwer, 1916b:677 (in catalog of Hymenoptera of Connecticut); Viereck, 1916:677 (...); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rau, 1918:135 (life history), 1922:22 (USA: Missouri: Meramac Highlands, nesting in nest of *Polistes*); Blackman and Stage, 1924:196 (New York: Syracuse, nesting in dead wood of hickory); Rau, 1926:198 (life history), 1928...:406 (nesting habits), 1928...:26 (...), 1931:200 (...); Richards, 1934:237 (revision); Brimley, 1938:443 (North Carolina: statewide); Sandhouse, 1940:143 (revision); Muma and Jeffers, 1945:255 (nest, spider prey); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park), 1953a:331 (North Carolina), 331 (North Carolina), 1956b:154 (West Virginia: Lost River State Park); K. Cooper, 1956:601 (concave partition wall of larval cell indicates exit); Evans, 1957b:91 (larva), 1959b:160 (additional description of larva); Krombein, 1963f:274 (Maryland: Plummers Island near Washington, D.C.); Bitner, 1972:24 (predation in nest by larvae of *Lecontella cancellata*, a clerid); R. Bohart and Menke, 1976:348 (listed); L. Davis, 1978:218 (North Carolina: Kill Devil Hills, data from Krombein, 1953a); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, as *clavatum*); Coville, 1982b:86 (revision; e. North America north to se. Canada, west to Rocky Mts.); Hermann and Gonzales, 1986:313 (venom apparatus; as *clavatum clavatum*); Beyer, Miller, and Fleming, 1987:480 (Tennessee: Humphreys County); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Jenkins and Matthews, 2004:209 (USA: Georgia, South Carolina nesting in trap nest, mud partition constructed prior to provisioning). – **As *Trypargilum clavatum***: Krombein, 1967b:203 (life

history observed in artificial nests); Krombein *in* Krombein and Burks, 1967:395 (listed); Krombein, 1979b:1646 (in catalog of North American Hymenoptera, as *clavatum clavatum*); Horn and Hanula, 2004:467 (South Carolina: Savannah River Site near Aiken).

*Trypoxylon annulare* Dahlbom, 1844:282, ♀. Holotype: ♀, Brazil: no specific locality (LUND). Synonymized with *Trypoxylon clavatum* by Richards, 1934:238. – Dahlbom, 1845:509 (in key); F. Smith, 1856:379 (listed); Taschenberg, 1875:372 (specimen in Halle University collection); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:700 (in catalog of world Hymenoptera).

*Trypoxylon rufozonale* W. Fox, 1891c:145, ♀, ♂ (as *rufozonalis*, incorrect original termination). Lectotype: ♀, USA: Colorado: no specific locality (ANSP), designated by Cresson, 1928:55. Synonymized with *Trypoxylon arizonense* by Sandhouse, 1940:140, and with *Trypoxylon clavatum* by Coville, 1982b:87. – W. Fox, 1894a:475 (in revision of North American Larrinae), Dalla Torre, 1897:708 (in catalog of world Hymenoptera); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Richards, 1934:231 (not examined), 349 (biological data of H. Smith, 1908:352).

*Trypoxylon quintilis* Viereck, 1906:206, ♂, incorrect original termination. Holotype: ♂, USA: Kansas: Douglas County (Kansas Univ.). Synonymized with *Trypoxylon clavatum* by Sandhouse, 1940:143. – Richards, 1934:231 (not examined); LaBerge, 1956:528 (holotype in Snow Entomological Museum).

*Trypoxylon cockerellae* Rohwer, 1909a:130, ♀. Holotype or syntypes: ♀, USA: Colorado: Boulder County: Boulder (USNM). Synonymized with *Trypoxylon clavatum* by Sandhouse, 1940:143. – Rau and Rau, 1916:42 (using nest of *Trypoxylon albitarse*). – **As *Trypoxylon clavatum* var. *cockerellae***: Richards, 1934:238 (revision, new status).

### **ssp. *johannis* Richards**

As *Trypoxylon collinum* (corrected to *Trypoxylon johannis* by Sandhouse, 1940:143): Packard, 1867:415 (revision, ♀ only); W. W. Fox, 1891c:146 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae).

*Trypoxylon johannis* Richards, 1934:238, ♀, ♂. Holotype: ♀, USA: Florida: Duval County: St. John's Bluff in Jacksonville (BMNH). – Sandhouse, 1940:143 (revision); Krombein *in* Muesebeck et al., 1951:956 (in catalog of North American Hymenoptera); Krombein and Evans, 1954:233 (Florida), 1955:232 (Florida: Arcadia); Evans, 1957b:92 (larva) Evans, 1959b:161 (additional description of larva); Krombein, 1959d:153 (in key to species of Lake Placid, Florida); R. Bohart and Menke, 1976:348 (listed). – **As *Trypargilum johannis***: Krombein, 1967b:210 (life history observed in artificial nests); Krombein *in* Krombein and Burks, 1967:395 (new combination, listed). – **As *Trypoxylon clavatum johannis***: Coville, 1982b:88 (revision, s. Georgia and peninsular Florida). – **As *Trypargilum clavatum johannis***: Coville *in* Krombein et al., 1979b:1646 (new status); Krombein, 1979b:1646 (in catalog of North American Hymenoptera);

### **567. *collinum* F. Smith**

*Trypoxylon collinum* F. Smith, 1856:381, ♀. Lectotype: ♀, USA: Florida: St. John's Bluff, now Jacksonville (BMNH), designated by Richards, 1934:272. – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:415 (revision, ♂ only, ♀ = *Trypoxylon clavatum johannis*); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); nec W. Fox, 1891c:146 and 1894a:475 (= *Trypoxylon clavatum johannis*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:271 (revision); Sandhouse, 1940:147 (revision); Krombein *in* Muesebeck et al., 1951:956 (listed); Krombein and Evans, 1954:233 (Florida: Paradise Key, Arcadia), 1955:232 (Florida); Evans, 1959b:150 (larva); Krombein, 1959d:153 (taxonomy, as *collinum collinum*), 1964c:18 (nest), 1970:22 (life history, as *collinum collinum*); R. Bohart and Menke, 1976:348 (listed); Evans, 1979:160 (larva); Coville, 1982b:65 (revision, USA: s. Georgia and peninsular Florida); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Jenkins and Matthews, 2004:209 (USA: Georgia nesting in trap nest, mud partition constructed prior to provisioning). – **As *Trypargilum collinum***: Krombein, 1967b:185 (life history observed in artificial nests, as *collinum collinum*); Krombein *in* Krombein and Burks, 1967:395 (listed, as *collinum collinum*);

Krombein, 1970:22 (life history, as *collinum collinum*); Krombein, 1979b:1648 (in catalog of North American Hymenoptera, as *collinum collinum*).

### **ssp. *rubrocinctum* Packard**

*Trypoxylon rubrocinctum* Packard, 1867:416, ♀ (as *rubro-cinctum*, incorrect original hyphenation). Lectotype: ♀, USA: Delaware: no specific locality (ANSP), designated by Cresson, 1928:55. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); W. Fox, 1891c:143 (in revision of North American *Trypoxylon*), 1894a:474 (in revision of North American Larinae); Peckham and Peckham, 1895:303 (life history), 1898:77 (life history); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: Baldwin); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rau, 1922:22 (USA: Missouri: St. Louis, twig nesting); Richards, 1934:274 (description of ♂, revision), 348 (life history summary); Brimley, 1938:443 (North Carolina: Bryson City, Hendersonville, Tarboro); Sandhouse, 1940:146 (revision); Krombein, 1950a:267 (North Carolina: Dare County); Krombein in Muesebeck et al., 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1953a:331 (North Carolina), 1954a:5 (nest and prey); Evans, 1957:94 (larva); Koerber and Medler, 1958:55 (Wisconsin, nesting in trap-nests); Evans, 1959b:161 (additional description of larva); Krombein in Krombein et al., 1957:189 (listed); Evans, 1959:161 (larva); Medler, 1967:344 (life history); nec Paetzel, 1973:26 (= *Trypoxylon tridentatum*); L. Davis, 1978:218 (South Carolina: Kill Devil Hills, data from Krombein, 1953a). – **As *Trypargilum collinum rubrocinctum***: Krombein in Krombein and Burks, 1967:395 (listed); Krombein, 1967b:187 (life history observed in artificial nests); Krombein, 1979b:1648 (in catalog of North American Hymenoptera); Finnamore, 1982:118 (in Sphecidae Fauna of Southern Quebec); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County). – **As *Trypoxylon collinum rubrocinctum***: Krombein, 1959d:153 (new status), 1963f:265 (natural enemies), 274 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); R. Bohart and Menke, 1976:348 (listed); Coville, 1982b:67 (revision); Beyer, Miller, and Fleming, 1987:480 (Tennessee: Humphreys County); Ahlstrom, 1995:110 (in checklist of insects of North Carolina).

### **568. *correntium* Brèthes**

*Trypoxylon correntium* Brèthes, 1909b:67, ♀. Holotype: ♀, Argentina: Corrientes: no specific locality (Mus. Montevideo). – Schrottky, 1913a:228 (Argentina: Corrientes); Richards, 1934:226 (not examined); R. Bohart and Menke, 1976:348 (listed); Genise, 1990:27 (type material in Museo de Montevideo, as *correntinum*); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### **569. *cubense* Richards**

*Trypoxylon cubense* Richards, 1934:252, ♂. Holotype: ♂, Cuba: no specific locality (NHMW). – Richards, 1969:122 (in key); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae).

### **570. *dubium* Coville**

*Trypoxylon dubium* Coville, 1982b:68, ♂, ♀. Holotype: ♂, Mexico: Sinaloa: Culiacán (Univ. Calif. Riverside). Paratypes: Baja California Sur to Costa Rica. – Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### **571. *emdeni* Richards**

*Trypoxylon emdeni* Richards, 1934. Holotype: ♀, Peru: no specific locality (Dresden). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### **572. *evansi* Coville**

*Trypoxylon evansi* Coville, 1982b:76, ♂, ♀. Holotype: ♂, USA: Arizona: Santa Cruz County: Madera Canyon in Santa Rita Mts (Cornell Univ.). Paratypes: Mexico to Costa Rica. – Amarante, 2002:49 (in catalog of Neotropical

Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 573. *excavatum* F. Smith

*Trypoxylon excavatum* F. Smith, 1856:330, ♀. Holotype or syntypes: ♀, Jamaica: no specific locality (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera), 1865a:148 (Cuba); de Saussure, 1867:79 (St. Thomas Island, redescription); Packard, 1867:414 (Cuba); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Fox, 1891c:140 (in revision of North American *Trypoxylon*), 1891d:343 (Jamaica), 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: Baldwin); Ashmead, 1900:307 (in checklist of Caribbean Hymenoptera); Rohwer, 1916b:676 (in catalog of Hymenoptera of Connecticut); Holland, 1917:295 (Cuba: Isla de Pinos, now Isla de la Juventud: Los Indios); Richards, 1934:250 (revision); Krombein, 1953c:16 (Bahamas: Bimini Islands); Richards, 1969:121 (Cuba), 123 (in key); Alayo Dalmau, 1973:180 (as synonym of *Trypoxylon subimpresum*); R. Bohart and Menke, 1976:348 (listed); Jayasingh and Freeman, 1980a:69-78 (Jamaica: trap-nesting), 1980b:214-219 (population dynamics); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### 574. *fractum* Richards

*Trypoxylon fractum* Richards, 1934:270, ♀. Holotype: ♀, Brazil: no specific locality (OXUM). – R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### 575. *fugax* Fabricius

*Trypoxylon fugax* Fabricius, 1804:182, sex not indicated. Syntypes: ♀, South America: no specific locality (ZMK). – Dahlbom, 1844:284 (in revision of Sphecidae and Pompilidae), 1845:509 (in key); F. Smith, 1856:379 (listed), 1857b:77 (Brazil, reared from old nest of *Polistes* stopped with clay); Taschenberg, 1875:374 (specimen in Halle University collection); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); du Buysson and Marshall, 1892:56 (Venezuela: Caracas); Dalla Torre, 1897:705 (in catalog of world Hymenoptera); Strand, 1910a:170 (Paraguay), 1912:289 (nest structure); nec Bodkin, 1918:317 (= *Trypoxylon nitidum*); Richards, 1934:254 (revision), 348 (citation of F. Smith, 1857:77); Vesey-FitzGerald, 1938:191 (Trinidad); van der Vecht, 1961a:26 (study of type material); R. Bohart and Menke, 1976:348 (listed); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

? *Trypoxylon columbianum* de Saussure, 1867:80, ♀. Holotype or syntypes: ♀, Colombia: Caracas (NHMW). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:212 (not examined), 255 (probable synonym of *Trypoxylon fugax*).

*Trypoxylon medianum* W. Fox, 1897b:385, ♂. Lectotype: ♂, Brazil: Corumbá (Carnegie Mus.), designated by Menke in Bohart and Menke, 1976:348. Synonymized with *Trypoxylon fugax* by Menke in Bohart and Menke, 1976:348. – Jörgensen, 1912:293 (Argentina: Mendoza Province, floral records); Richards, 1934:255 (probable synonym of *Trypoxylon fugax*).

### ssp. *santamartae* Richards

*Trypoxylon fugax* var. *santa martae* Richards, 1934:255, ♂, incorrect original division of word. Holotype: ♂, Colombia: Cartagena (depository?). – As *Trypoxylon fugax santamartae*: R. Bohart and Menke, 1976:348 (new status, listed); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

### 576. *fuscipenne* Fabricius

*Trypoxylon fuscipenne* Fabricius, 1804:181, sex not indicated. Lectotype: ♂, South America: no specific locality (ZMK), designated by van der Vecht, 1961a:26. – Palisot de Beauvois, 1811:115 (South Carolina); Dahlbom, 1844:283 (in revision of Sphecidae and Pompilidae), 1845:509 (in key); F. Smith, 1856:379 (listed); Cresson, 1862:235 (in catalog of North American Hymenoptera); Taschenberg, 1875:372 (redescription); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); W. Fox, 1899:200

(Brazil: São Paulo); Strand, 1910a:170 (Paraguay); Rohwer, 1912:473 (unrecognizable species); Richards, 1934:224 (revision), 352 (life history); Vesey Fitzgerald, 1936:112 (Trinidad: nest); R. Bohart and Menke, 1976:348 (listed); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection); Callan, 1991a:8 (Trinidad); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies). – *As Apius fuscipennis*: Jurine, 1807:142 (listed).

As *Trypoxylon cinereum*: Rau 1933:156 (Panama: Barro Colorado, nest), corrected to *Trypoxylon fabricator* by Rau, 1935b:188.

### 577. *guassu* Amarante

*Trypoxylon majus* Richards, 1934:280, ♀, primary homonym of *Trypoxylon majus* Kohl, 1883. Holotype: ♀, Brazil: Pará: Obidos (MNHU). – R. Bohart and Menke, 1976:349 (listed); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders).

*Trypoxylon guassu* Amarante, 2002:50. Substitute name for *Trypoxylon major* Richards, 1934.

### 578. *joergenseni* Brèthes

*Trypoxylon joergenseni* Brèthes, 1910a:284, ♀ (as *Jörgenseni*, incorrect original capitalization and diacritic mark). Syntypes: Argentina: Mendoza: Chacras de Coria (MACN). – Jörgensen, 1912:293 (Argentina: Mendoza Province); Schrottky, 1913a:228 (Argentina: Mendoza); Richards, 1934:269 (possibly the valid name for *Trypoxylon melanopterum*); Gemignani, 1940:446 (redescription of type); Sielfeld, 1981b:73 (in checklist of Chilean Sphecidae, as *jorgenseni*); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

*Trypoxylon melanopterum* Richards, 1934:268, ♀, ♂. Holotype: ♀, Argentina: no specific locality (BMNH). Synonymized with *Trypoxylon joergenseni* by Gemignani, 1940:446. – Richards, 1934:349 (bred from empty cells of *Polistes*); Bischoff and von Schulthess, 1937:170 (Bolivia: Villa Montes, as *melanopterum*); R. Bohart and Menke, 1976:348 (listed, as questionable synonym of *Trypoxylon jorgenseni*).

### 579. *lactitarse* de Saussure

- Trypoxylon lactitarse* de Saussure, 1867:81, ♂. Holotype: ♂, Mexico: Veracruz: Orizaba (MHNG). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889a:41 (listed); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Menke, 1974:418 (taxonomy); R. Bohart and Menke, 1976:348 (listed); Coville, 1982a:335 (life history), 1982b:77 (revision); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Beyer, Miller, and Fleming, 1987:480 (Tennessee: Humphreys County); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Camillo, Garófalo, Serrano, and Muccillo, 1995:466 (Brazil, highest nesting frequency in September to April); Assis and Camillo, 1997:338-344 (observations in trap nests); Gomes, Pompolo, and Campos, 1997:178 (study of karyotype, n = 15); Wcislo, 1998:181 (proportions of antennae in relations to parasitic/non-parasitic behavior); Camillo and Brescovit, 1999:151 (spider prey); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruiz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); von Boroski Borges and Blochtein, 2002:54 (sex ratio, parasites, nest structure, cocoon); Alves-dos-Santos, 2003:330 (Brazil: University of São Paulo campus); Culin and Robertson, 2003:321 (list of spider prey); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 2005:62 (nest parasite: mutillid *Sphaerophthalma jacala* Schuster); Martins, Serrão, and Schmidt, 2005:121 (spermatheca long, coiled, with narrow reservoir); Giles and Ascher, 2006:231 (New York: Black Rock Forest Preserve). – **As *Trypargilum lactitarse***: Krombein, 1979b:1647 (in catalog of North American Hymenoptera); Maes, 1989:100 (in catalog of Nicaraguan Sphecidae); Amarante, 1993:19 (ne. Brazil); Camillo, Garófalo, Muccillo, and Serrano, 1993:769 (life history); E. Nielsen, 1993:10 (nest guarding by male); Morato, 1994:13 (nest parasite: *Xystromutilla asperiventris*).
- Trypoxylon striatum* Provancher, 1888:283, ♀. Holotype: ♀, Canada: Ontario: Ottawa (not located by Gahan and Rohwer, 1918:200, CNC according to Coville, 1982:79). Synonymized with *Trypoxylon lactitarse* by Menke, 1975:418. – W. Fox, 1891c:148 (unidentified species), 1894a:476 (original description copied); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Harrington, 1902:222 (Canada: Ontario: Ottawa); Richards, 1934:247 (revision); Sandhouse, 1940:144 (revision); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck et al., 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park); Krombein *in* Krombein et al., 1957:189 (listed); Krombein, 1952b:178 (USA: West Virginia: Lost River State Park), 1954a:6 (West Virginia: Lost River State Park); Krombein and Evans, 1954:233 (Florida, spider prey); Krombein, 1956a:155 (nest, prey, cocoon); Koerber and Medler, 1958:55 (Wisconsin, nesting in trap-nests); Evans, 1959b:161 (additional description of larva); Balduf, 1961:82 (nest); Krombein, 1963:265 (life history); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Medler, 1967:433 (nesting habits); Bitner, 1972:24 (predation in nest by larvae of *Lecontella cancellata*, a clerid); R. Bohart and Menke, 1976:349 (listed), 628 (junior synonym of *Trypoxylon lactitarse*); Sarazin, 1986:307 (holotype in CNC); Callan, 1991a:8 (Trinidad); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Jenkins and Matthews, 2004:205, 209, 212 (USA: Georgia nesting in trap nest, mud partition constructed prior to provisioning). – **As *Trypargilum striatum***: Krombein, 1967b:214 (life history observed in artificial nests); Krombein *in* Krombein and Burks, 1967:395 (listed).
- Trypoxylon cinereum* Cameron, 1889a:40, ♀, ♂. Lectotype: ♀, Mexico: Presidio (BMNH), designated by Richards, 1934:247. Synonymized with *Trypoxylon striatum* by Sandhouse, 1940:144. – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Strand, 1910a:170 (possibly a synonym of *Trypoxylon fuscipenne*); Bodkin, 1918:317 (British Guiana); Richards, 1934:247 (revision), 349 (life history summary); Vesey Fitzgerald, 1936:112 (Trinidad).
- Trypoxylon albopilosum* W. Fox, 1891c:139, ♀, ♂. Lectotype: ♀, USA: Pennsylvania: no specific locality (ANSP), designated by Cresson, 1928:52. Synonymized with *Trypoxylon striatum* by Harrington, 1902:222. – W. Fox, 1893:474 (...), 1894a:474 (in revision of North American Larrinae); Peckham and Peckham, 1895:303 (nesting habits); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Peckham and Peckham, 1898:77 (nesting habits); Bridwell, 1899:209 (Kansas: Baldwin); Rohwer, 1909g:380 (diagnostic characters, as *albopilosum albopilo-*

*sum*); Mickel, 1917b:393 (in catalog of Nebraskan Sphecidae); Rau, 1926:199 (nest), 1928:423 (life history), 1931:200 (homing experiments); Brimley, 1938:443 (North Carolina: Elkin, Raleigh).

*Trypoxylon albopilosum planoense* Rohwer, 1909g:380, ♀. Holotype: ♀, USA: Texas: Plano (USNM). Synonymized with *Trypoxylon striatum* by Sandhouse, 1940:144.

#### 580. *laeve* W. Fox

*Trypoxylon laeve* W. Fox, 1897b:384, ♀, ♂. Lectotype: ♂, Brazil: "Marurú" (Carnegie Mus.), designated by Menke in Bohart and Menke, 1976:348. – Richards, 1934:212 (not examined); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

#### 581. *laevifrons* F. Smith

*Trypoxylon laevifrons* F. Smith, 1873b:101, ♀. Holotype or syntypes: ♀, Brazil: Amazonas: Ega, now Tefé (BMNH). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera, as *levifrons*); W. Fox, 1897b:384 (Brazil: Mato Grosso: Chapada do Guimaraes); Richards, 1934:265 (revision); R. Bohart and Menke, 1976:348 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

#### 582. *lenkoi* Amarante

*Trypoxylon lenkoi* Amarante, 1991:433, ♂. Holotype: ♂, Brazil: São Paulo: Boa Esperança do Sul: Fazenda Itaquêre (Mus. Zool. Univ. São Paulo). – Amarante, 1993:19 (ne. Brazil), 2002:50 (in catalog of Neotropical Crabronidae).

#### 583. *luteitarse* de Saussure

*Trypoxylon luteitarse* de Saussure, 1867:82, ♀. Holotype: ♀, Mexico: Sierra Madre Oriental: Cordova (MHNG). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889a:41 (listed); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Menke, 1974:418 (specimens in de Saussure collection, Genève); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:44 (revision; e. North America to Argentina); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

*Trypoxylon spatulatum* Richards, 1934:225, ♂. Holotype: ♂, Mexico: Tabasco (MNHU). Synonymized with *Trypoxylon luteitarse* by Coville, 1982b:44. – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

#### 584. *lynchi* Brèthes

*Trypoxylon lynchi* Brèthes, 1913:154, ♀, ♂ (as *Lynchi*, incorrect original capitalization). Syntypes: Argentina or Paraguay: Chaco: no specific locality (MACN). – Richards, 1934:268 (possibly the valid name for *Trypoxylon gaucho*); Gemignani, 1940:440 (redescription of type); R. Bohart and Menke, 1976:349 (listed); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

*Trypoxylon gaucho* Richards, 1934:267, ♀. Holotype: ♀, Argentina: Chaco de Santiago del Estero: near Icano (MNHN). Synonymized with *Trypoxylon lynchi* by Gemignani, 1940:439. – R. Bohart and Menke, 1976:349 (listed, as questionable synonym of *Trypoxylon lynchi*).

#### 585. *mayri* Richards

*Trypoxylon mayri* Richards, 1934:252, ♀, ♂. Holotype: ♂, Cuba: no specific locality (NHMW). – Richards, 1969:121 (Cuba), 123 (in key); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Portuendo and Fernández, 2004:135 (Cuba: Sierra Maestra); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae).

#### 586. *melanoleucum* Richards

*Trypoxylon melanoleucum* Richards, 1934:216, ♂. Holotype: ♂, Brazil: Espirito Santo (MNHU). – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

### 587. *menkeanum* Coville

*Trypoxylon menkeanum* Coville, 1982b:79, ♂, ♀. Holotype: ♂, Mexico: Morelos: Cuernavaca (USNM). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 588. *mexicanum* de Saussure

*Trypoxylon albitarse* var. *mexicana* de Saussure, 1867:77, ♂, ♀. Lectotype: ♂, Mexico: Veracruz: Orizaba (MHNG), designated by Coville, 1982b:40. – **As *Trypoxylon mexicanum***: Cameron, 1889a:41 (listed, new status); Rohwer, 1912:476 (Mexico), 478 (in key), 1914:522 (Guatemala: Quirigua; redescription); Richards, 1934:217 (revision), 352 (summary of nesting habits); Rau, 1940:592 (Mexico: Hidalgo: Jacala, San Luis Potosi: Tamazunchale; making clay nests of parallel pipes; prey: *Eustalia fusco*, *Leucauge* sp.), 1943:649 (Mexico: Hidalgo: Jacala, flight period, prey: *Eustala anastera* Walckener, *Neoscona orizabensis* Cambridge); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:39 (revision; Mexico and Central America); **Maes, 1989:101 (in catalog of Nicaraguan Sphecidae)**; Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Amarante, 2005:11 (correction to his 2002 catalog).

As *Trypoxylon albitarse*: Du Buysson, 1898:... (Mexico, life history), corrected to *Trypoxylon mexicanum* by Richards, 1934:352.

*Trypoxylon gandarai* Rohwer, 1912:476, ♂. Holotype: ♂, Mexico: Distrito Federál: no specific locality (USNM). Synonymized with *Trypoxylon mexicanum* by Coville, 1982b. – Rohwer, 1912:478 (in key); Richards, 1934:212 (not examined); R. Bohart and Menke, 1976:348 (listed); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 589. *monstrificum* Kohl

*Trypoxylon monstrificum* Kohl, 1905b:365, ♂. Holotype: ♂, Bolivia: Mapiri (NHMW). – Richards, 1934:229 (revision); R. Bohart and Menke, 1976:349 (listed); Dollfuss, 1989:13 (holotype in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

### 590. *monteverdae* Coville

*Trypoxylon monteverdae* Coville, 1982b:46, ♂, ♀. Holotype: ♂, Costa Rica: Puntarenas Province: Monteverdae (CAS). – Brockmann, 1992:66 (male behavior, courtship, nesting); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

### 591. *mutatum* Kohl

*Trypoxylon coloratum* Taschenberg, 1875:375, ♀, ♂, junior primary homonym of *Trypoxylon coloratum* F. Smith, 1857. Syntypes: Argentina: Mendoza: Mendoza (Halle); Kohl, 1885a:203 (in checklist of world *Trypoxylon*).

*Trypoxylon mutatum* Kohl, 1885a:203. Substitute name for *Trypoxylon coloratum* Taschenberg. Synonymized with *Trypoxylon coloratum* Taschenberg by Richards, 1934:256. – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Jörgensen, 1912:293 (Argentina: Mendoza Province); Schrottky, 1913a:228 (Paraguay); Richards, 1934:256 (revision); R. Bohart and Menke, 1976:349 (listed); Amarante, 1993:19 (ne. Brazil), 2002:50 (in catalog of Neotropical Crabronidae).

### ssp. *confluens* Richards

*Trypoxylon mutatum* var. *confluens* Richards, 1934:257, ♀. Holotype: ♀, Uruguay: Montevideo (MNHU). – **As *Trypoxylon mutatum confluens***: R. Bohart and Menke, 1976:349 (new status, listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).



**592. nattereri Richards**

*Trypoxylon nattereri* Richards, 1934:236, ♀. Holotype: ♀: Brazil: no specific locality (NHMW). Paratype: Peru: Lima. – R. Bohart and Menke, 1976:349 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**593. nitidum F. Smith**

*Trypoxylon nitidum* F. Smith, 1856:379, "♀" = ♂. Holotype or syntypes: ♂, Brazil: Pará: Santarém (BMNH). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Bodkin, 1918:317 (British Guiana: Issororo); Richards, 1934:276 (revision), 347 (life history); Vesey Fitzgerald, 1936:112 (Trinidad; use of preexisting holes for nesting); Bischoff and von Schulthess, 1937:170 (Bolivia: San José); R. Bohart and Menke, 1976:349 (listed); Menke, 1979a:303 (Tahiti); Coville, 1982b:70 (revision); Callan, 1991a:8 (Trinidad); Amarante, 1993:19 (ne. Brazil); Morato, 1994:13 (nest parasite: *Xystromutilla asperiventris*); Gomes, Pompolo, and Campos, 1997:178 (study of karyotype, n = 15); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Morato, 2001:739, 740 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Amarante, 2002:50 (in catalog of Neotropical Crabronidae) Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); von Boroski Borges and Blochtein, 2002:55 (sex ratio, nest parasites, nest structure, cocoon); Scher and Pompolo, 2003:307 (two groups of karyotypes in population from Doce Park, Brazil: one with chromosome number n = 15, 2n = 30, and rich in acrocentric chromosomes; the other with n = 12 to 14, 2n = 25 to 28, and rich in pseudo-acrocentric chromosomes); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

*Trypoxylon bahiae* de Saussure, 1867:80, ♀. Syntypes: ♀, Brazil: Bahia (MHNG). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera).

*Trypoxylon annulipes* Taschenberg, 1875:377, ♂. Holotype: ♂, Venezuela: no specific locality (Halle). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:701 (in catalog of world Hymenoptera).

*Trypoxylon rufosignatum* Taschenberg, 1875:374, ♂. Holotype: ♂, Brazil: Lagoa Santa (Halle). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); W. Fox, 1897b:383 (Brazil: Mato Grosso: Chapada do Guimaraes); Dalla Torre, 1897:708 (in catalog of world Hymenoptera).

*Trypoxylon fallax* W. Fox, 1897b:386, ♀, ♂. Lectotype: ♂, Brazil: Marurú (Carnegie Mus.), designated by Menke in Bohart and Menke, 1976:349. Synonymized with *Trypoxylon nitidum* by Menke in Bohart and Menke, 1976:349. – Richards, 1934:277 (probable synonym of *Trypoxylon nitidum*).

As *Trypoxylon fugax*: Bodkin, 1918:317 (British Guiana, nesting in old cells of *Eumenes canaliculata* Ol.), corrected to *Trypoxylon nitidum* by Richards, 1934:347.

**ssp. aztecum de Saussure**

*Trypoxylon aztecum* de Saussure, 1867:80, ♂, ♀. Lectotype: ♀, Mexico: Pueblo Viejo near Tampico (MHNG), designated by Richards, 1934:277. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); nec Cameron, 1889a:41 (= *Trypoxylon tenocitlan*); W. Fox, 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Cameron, 1912a:438 (Guiana); Rohwer, 1914:522 (Guatemala: Quirigua); Richards, 1934:276 (as synonym of *Trypoxylon nitidum*). – As *Trypoxylon nitidum aztecum*: Richards, 1936:457 (new status); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:71 (revision, se. Texas, Mexico); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

*Trypoxylon fulvispina* Cameron, 1889a:42, ♀. Holotype or syntypes: ♀, Mexico: Tabasco: Teapa (BMNH). Synonymized with *Trypoxylon nitidum aztecum* by ... – Dalla Torre, 1897:706 (in catalog of world Hymenoptera).

**ssp. mooreaense Tsuneki**

*Trypoxylon nitidum mooreaense* Tsuneki, 1981a:11, ♀. Holotype: ♀, Tahiti Archipelago: Moorea Island: Afareaitu (BMNH). – Tsuneki, 1981a:4 (in key).

**ssp. schulthessi Richards**

*Trypoxylon nitidum* var. *schulthessi* Richards, 1936b:457, ♀. Holotype: ♀, Costa Rica: San José (von Schulthess coll). – As *Trypoxylon nitidum schulthessi*: R. Bohart and Menke, 1976:349 (new status, listed); Coville, 1982a:332 (life history); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**594. niveitarse de Saussure**

*Trypoxylon niveitarse* de Saussure, 1867:81, ♂. Holotype or syntypes: ♂, Brazil: no specific locality (NHMW). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Holmberg, 1903:469 (Argentina); nec Rau, 1933:156 (= *Trypoxylon atkinsoni*); Richards, 1934:212 (not examined); R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**595. oaxacae Coville**

*Trypoxylon oaxacae* Coville, 1982b:90, ♂. Holotype: ♂, Mexico: Oaxaca: 9 mi N La Ventosa (Univ. Kansas). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**596. obidense Richards**

*Trypoxylon obidense* Richards, 1934:272, ♂. Holotype: ♂, Brazil: Amazonas: Obidos (NHMW). – R. Bohart and Menke, 1976:349 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**597. occidentale Coville**

*Trypoxylon occidentale* Coville, 1982b:72, ♂, ♀. Holotype: ♂, USA: Arizona: Cochise County: Cave Creek 1 mi SW Portal (CAS). Paratypes: Mexico (Chihuahua and Jalisco). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae, as *oxidentalis*).

**598. olfersi Richards**

*Trypoxylon olfersi* Richards, 1934:229, ♀. Holotype: ♀, Brazil: no specific locality (MNHU). – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**599. opacum Brèthes**

*Trypoxylon opacum* Brèthes, 1913:155, ♀, ♂. Lectotype: Argentina: Jujuy (MACN), designated by Gemignani, 1940:442 (as holotype). – Richards, 1934:271 (possibly the valid name for *Trypoxylon alutaceum*); Gemignani, 1940:441 (redescription of type); R. Bohart and Menke, 1976:349 (listed); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, almost certainly a species different from Brèthes's); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); von Boroski Borges and Blochtein, 2002:55 (sex ratio, nest parasites, nest structure, cocoon).

*Trypoxylon alutaceum* Richards, 1934:270, ♀, ♂. Holotype: ♀, Brazil: Biske (NHMW). Synonymized with *Trypoxylon opacum* by Gemignani, 1940:441. – R. Bohart and Menke, 1976:349 (listed, as questionable synonym of *Trypoxylon opacum*); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**600. optimum Richards**

*Trypoxylon optimum* Richards, 1934:257, ♀, ♂. Holotype: ♂, Brazil: no specific locality (BMNH). Paratypes: Argentina. – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**ssp. rugosum Menke**

*Trypoxylon optimum* var. *regium* Richards, 1934:258, ♀, primary homonym of *Trypoxylon regium* Gussakovskij, 1933.

Holotype: ♀, Brazil: St. Joao del Rey (MNHU).

*Trypoxylon optimum rugosum* Menke in Bohart and Menke, 1976:349. Substitute name for *Trypoxylon optimum regium* Richards, 1934. – Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**601. orizabense Richards**

*Trypoxylon orizabense* Richards, 1934:273, ♂, ♀. Holotype: ♀, Mexico: Veracruz: Orizaba (NHMW). – R. Bohart and Menke, 1976:349 (listed); Coville, 1979b:613 (life history), 1982b:53 (revision, s. Arizona to s. Mexico); Dollfuss, 1989:13 (type material in NHMW; as *orizabense*); Hook, 1998:251 (first record from Texas: Chisos Mts.); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – As *Trypargilum orizabense*: Krombein, 1979b:1649 (in catalog of North American Hymenoptera, new combination).

**602. pectorale Richards**

*Trypoxylon pectorale* Richards, 1934:248, ♀, ♂. Holotype: ♀, Mexico: Guerrero: La Venta (BMNH). – Vesey Fitzgerald, 1936:112 (Trinidad); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:55 (revision, s. Mexico, central America, Trinidad); Callan, 1991a:8 (Trinidad); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

**603. personatum Amarante**

*Trypoxylon personatum* Amarante, 1991:430, ♂. Holotype: ♂, Brazil: Amazonas: Remanso: Rio Madeira (Mus. Zool. Univ. São Paulo). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

**604. platense Brèthes**

*Trypoxylon platense* Brèthes, 1913:155, ♀, ♂. Syntypes: Argentina: Buenos Aires (MACN). – Richards, 1934:275 (possibly the valid name for *Trypoxylon mendozanum*); Gemignani, 1940:439 (redescription of type); R. Bohart and Menke, 1976:349 (listed); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

*Trypoxylon mendozanum* Richards, 1934:274, ♀, ♂. Holotype: ♀, Argentina: Mendoza: no specific locality (BMNH). Synonymized with *Trypoxylon platense* by Gemignani, 1940:439. – Bischoff and von Schulthess, 1937:170 (Argentina: Junca viejo); R. Bohart and Menke, 1976:349 (listed, as questionable synonym of *Trypoxylon platense*).

**605. politum Say**

*Trypoxylon politum* Say, 1837:373, ♀ (as *politus*, incorrect original termination). Holotype or syntypes: USA: Indiana: no specific locality (lost). – Le Conte, 1859b:756 (original description copied); Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:413 (revision); Cresson, 1873:226 (Texas); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Townsend, 1893:165 (nest parasite: *Sarcomacronychia trypoxylonis*, a sarcophagid); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: Baldwin); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Rohwer, 1912:473 (identity of species, synonymy), 478 (in key), 1916b:676 (diagnosis, key); Mickel, 1918b:392 (in catalog of Nebraskan Sphecidae); Rau, 1925:1 (...), 1926:187 (...), 1928:428 (life history); Osborne, 1929:751 (behavior, nest); Dow, 1930a:98 (observations of nests by J. Bartram, 1745, probably refer to *Sceliphron caementarium* and *Trypoxylon politum*), 100 (*Sphex caerulea* of Latrobe, 1806, 1809, is obviously *Trypoxylon politum*), 1930c:14 (photograph of nest); Brimley, 1938:443 (North Carolina: Buncombe County); Rau, 1938b:541 (sleeping habits); Hartman, 1944:7 (nesting habits observed in glas tube); Muma and Jeffers, 1944:50 (unusual nests on abandoned window frames measuring up to 25 inches), 1954:246 (spider prey); Sandhouse, 1940:138 (revision); Rau, 1944:9 (hunting habits and prey); Muma and Jeffers, 1945:254 (spider prey, nest); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krom-

bein in Muesebeck et al., 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1952b:177 (USA: West Virginia: Lost River State Park), 1954a:5 (West Virginia: Lost River State Park); Evans, 1957:95 (larva), 1959b:161 (additional description of larva); Krombein, 1963f:274 (Maryland: Plummers Island near Washington, D.C.); Shinn, 1966:112 (nest); M. Johnson, 1974:448 (parasite: *Trichrysis tridens* (Lepeletier)); Cross, Stith, and Bauman, 1975:901 (life history); R. Bohart and Menke, 1976:349 (listed; subgenus *Trypargilum*); Bauman, Glenboski, Mostafa, and Cross, 1978:867 (respiratory rates); Cross, Mostafa, Bauman, and Lancaster, 1978:647 (energy transfer from spider prey); Brockmann, 1980c:53 (diversity in nesting behavior); Coville, 1982b:40 (revision; se. Canada, e. USA); Obin, 1983:321 (hunting spiders away from nesting sites); Brockmann, 1985:53 (diversity in nesting behavior); Gonzales and Hermann, 1985:294 (venom apparatus); Bauman, Wilman, and Cross, 1987:990 (temperature effects on postdiapause development); Rehnberg, 1987:189 (prey selection); Brockmann and Grafen, 1989:232 (mate conflict and male behavior), 1992:7 (sex-ratio and life-history patterns); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Coward and Matthews, 1995:371 (predation on prepupae by tufted titmouse, *Parus bicolor*); Molumby, 1995:159 (dynamics of nest parasites); Downing, 1996:473 (emerging from clustered nests); Matthews, 1997a:152 (using nest in teaching ecological interactions), 1997b:51 (only males of parasite *Sphaerophthalma pensylvanica* (Lepeletier) develop in this species nests); Molumby, 1997:279 (maternal sex allocation and sex dependent selection for body size); Volkova, Matthews, and Barber, 1999:323 (list of spider prey); González and Matthews, 2003:85 (slightly shorter development times and slightly lower proportion of males of *Melittobia* developing in nests of *Trypoxylon politum*, as compared to *Megachile rotundata*, probably reflect better host nutritional quality); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Brockmann, 2004:503 (facultative diapause); Kurczewski, 2004:241 (reuse of old nest by *Chalybion californicum*), González, Matthews, and Matthews, 2005:50 (parasite *Dibrachys pelos* (Grissell), a pteromalid, reared on prepupae in laboratory). – **As *Trypargilum politum***: Krombein in Krombein and Burks, 1967:395 (listed); C. Lin, 1969:129 (nest, list of prey); Lindstrom and Strawn, 1971:245 (...); Johnson, 1974:448 (natural enemies); Barber and Matthews, 1979:260 (utilization of trap nests); Krombein, 1979b:1649 (in catalog of North American Hymenoptera).

*Trypoxylon neglectum* Kohl, 1884a:340, ♂. Syntypes: ♂, USA: South Carolina: no specific locality (NHMW). Synonymized with *Trypoxylon politum* by Rohwer, 1912:474. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Fox, 1891c:138 (in revision of North American *Trypoxylon*), 1893:474 (in key), 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:220 (revision); Dollfuss, 1989:13 (type material in NHMW).

*Trypoxylon basale* Rohwer, 1912:475, ♂, ♀ (also spelled *basile*, an error), primary homonym of *Trypoxylon basale* Stephens, 1829 (now in *Mimesa*). Holotype: ♂, USA: Florida: no specific locality (USNM). Synonymized with *Trypoxylon politum* by Sandhouse, 1940:138. – Rohwer, 1912:478 (in key); Brimley, 1938:443 (North Carolina: Elkin, Raleigh), 1942:36 (North Carolina: previous records actually refer to *Trypoxylon politum*).

*Trypoxylon politiforme* Rohwer, 1912:476, ♂, ♀. Holotype: ♂, USA: Louisiana: Berwick (USNM). Synonymized with *Trypoxylon neglectum* by Richards, 1934:220 and with *Trypoxylon politum* by Sandhouse, 1940:138. – Rohwer, 1912:478 (in key); Richards, 1934:219 (revision), 1936b:462 (correction to geographic distribution); Fatig, 1936:44 (behavior, nest).

As *Trypoxylon albitarse* (corrected to *Trypoxylon politum* by Sandhouse, 1940:138, confirmed by van der Vecht, 1961a:26): H. Smith, 1908:352 (in key); Rau and Rau, 1913:401 (nesting habits), 1916:27 (nesting habits, as *albitarsis*); Richards, 1934:218 (revision), 351 (life history summary); corrected by Rohwer, 1912:473; Walsh and Riley, 1869:133; W. Fox, 1891:136, 1893:472; Howard, 1904:pl.6, fig.6..

### 606. *poultoni* Richards

*Trypoxylon poultoni* Richards, 1934:220, ♂. Holotype: ♂, South America: no specific locality (OXUM). – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

### 607. *punctulatum* Taschenberg

*Trypoxylon punctulatum* Taschenberg, 1875:372, ♀. Holotype: ♀: Brazil: Nova Friburgo (Halle). – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Schrottky, 1910b:70 (first record from Paraguay: Puerto Bertoni); Bertoni, 1911:134 (nest and prey, as *punctatum*); Schrottky, 1913a:228 (Paraguay); Bertoni, 1929:224 (Paraguay; nesting in abandoned cells of other aculeates); Richards, 1934:245 (revision, Brazil, Paraguay). – R. Bohart and Menke, 1976:349 (listed); Amarante, 1993:19 (ne. Brazil); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

### 608. *rogenhoferi* Kohl

*Trypoxylon rogenhoferi* Kohl, 1884a:342, ♀, ♂ (as *Rogenhoferi*, incorrect original capitalization). Syntypes: Brazil: São Paulo: Ypanema (NHMW). – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:246 (revision, Brazil, Argentina), 349 (cocoon); R. Bohart and Menke, 1976:349 (listed); Fritz and Genise, 1980 (using nests of *Sceliphron asiaticum*, *fistularium*, and of *Trypoxylon albitarse*; cocoon); Dollfuss, 1989:13 (type material in NHMW); Camillo, Garófalo, and Serrano, 1994:299 (nesting biology); Camillo, Garófalo, Serrano, and Muccillo, 1995:466 (Brazil, highest nesting frequency in September to April); Garcia, 1995:12 (nesting behavior); Garcia and Adis, 1995:259 (nesting behavior); Assis and Camillo, 1997:338-344 (observations in trap nests); Camillo, 2001:1009 (inquiline in unused nests of vespid *Brachymeres dyscherus* de Saussure); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); von Boroski Borges and Blochtein, 2002:56 (sex ratio, nest parasites, nest structure, cocoon); Peruquetti and Del Lama, 2003b:581 (large females collect more spider prey and amass more prey per cell, spiders were heavier, daughters are larger).

? *Trypoxylon holoneurum* Schrottky, 1910b:69, ♀, ♂. Syntypes: Argentina: La Rioja and Mendoza Provinces; Paraguay: Encarnacion and Puerto Bertoni (depository?). Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246. – Schrottky, 1913a:228 (Argentina, Paraguay); Amarante, 2005:11 (correction to his 2002 catalog).

*Trypoxylon argentinum* Brèthes, 1910a:284, ♀. Syntypes: ♀, Argentina: Mendoza: Chacras de Coria. Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246, definitely synonymized by Gemignani, 1940:443. – Jörgensen, 1912:293 (Argentina: Mendoza Province); Brèthes, 1913:154 (description of ♂); Schrottky, 1913a:228 (Argentina: Mendoza); Frer, 1921:69 (nesting behavior); Gemignani, 1933:312 (redescription), 1940:443 (redescription of type); Genise, 1990:27 (type material in MACN).

*Trypoxylon festivum* Brèthes, 1913:156, ♂. Holotype: ♂, Argentina: Misiones: no specific locality (MACN). Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246, definitely synonymized by Gemignani, 1940:445, synonymy confirmed by Fritz and Genise, 1980:69. – Gemignani, 1933:311 (redescription); Gemignani, 1940:445 (redescription of type); Genise, 1990:27 (type material in MACN); Amarante, 2005:11 (correction to his 2002 catalog).

*Trypoxylon incognitum* Brèthes, 1913:154, ♀. Holotype: ♀, South America: origin unknown (MACN). Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246, definitely synonymized by Gemignani, 1940:442. – Gemignani, 1940:442 (redescription of type); Genise, 1990:27 (type material in MACN).

### 609. *rohweri* Richards

*Trypoxylon rohweri* Richards, 1934:251, ♀, ♂. Holotype: ♀, Haiti: Port-au-Prince (USNM). – Richards, 1969:122 (in key); R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

### 610. *salti* Richards

*Trypoxylon salti* Richards, 1934:241, ♀, ♂. Holotype: ♀, Colombia: Río Frío (depository not indicated). Paratypes: Ecuador to Mexico. – nec Rau, 1943:649 (= *Trypoxylon saussurei*); Richards, 1934:351 (nest in knot-hole of a window sill); R. Bohart and Menke, 1976:349 (listed); Maes, 1989:102 (in catalog of Nicaraguan Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**611. saundersi Richards**

*Trypoxylon saundersi* Richards, 1934:227, ♀. Holotype: ♀, "Colum. Chart" = ? Colombia (OXUM). – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

**612. saussurei Rohwer**

*Trypoxylon mexicanum* de Saussure, 1867:78, ♀, ♂, junior primary homonym of *Trypoxylon mexicanum* de Saussure, 1867:77. Lectotype: ♂, Mexico: Cordova (MHNG), designated by Coville, 1982b:97. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Amarante, 2005:11 (correction to his 2002 catalog).

*Trypoxylon saussurei* Rohwer, 1912:478. Substitute name for *Trypoxylon mexicanum* de Saussure, 1867:78. – Richards, 1934:231 (not examined); R. Bohart and Menke, 1976:349 (listed); Coville, 1982a:337 (life history), 1982b:96 (revision; Veracruz, Mexico to Costa Rica); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Maes, 1989:101 (in catalog of Nicaraguan Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – As *Trypargilum saussurei*: Krombein, 1979b:1647 (new combination, in catalog of North American Hymenoptera).

As *Trypoxylon salti*: Rau, 1943:649 (Mexico: San Luis Potosí, reusin nests of *Sceliphron assimile*), corrected to *Trypoxylon saussurei* by Coville, 1982b:96.

**613. schnusei Richards**

*Trypoxylon schnusei* Richards, 1934:218, ♂. Holotype: ♂, Peru: no specific locality (Dresden). – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

**614. scrobiferum Richards**

*Trypoxylon scrobiferum* Richards, 1934:253, ♀. Holotype: ♀, Guyana: Essequibo River: Moraballi Creek (BMNH). – Richards, 1936b:462 (correction to original description); Vesey-FitzGerald, 1938:191 (Trinidad); R. Bohart and Menke, 1976:349 (listed); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

**615. semiflavum Richards**

*Trypoxylon semiflavum* Richards, 1934:264, ♀. Holotype: ♀, Bolivia: no specific locality (NHMW). – R. Bohart and Menke, 1976:349 (listed); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

**616. sinaloense Coville**

*Trypoxylon sinaloense* Coville, 1982b:72, ♂, ♀. Holotype: ♂, Mexico: Sinaloa: Mazatlán (CNC). – Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

**617. spinosum Cameron**

*Trypoxylon spinosum* Cameron, 1889a:46, ♀, ♂. Lectotype: ♀, Mexico: Sinaloa: Presidio (BMNH), designated by Richards, 1934:243. – W. Fox, 1891c:145 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae), 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Rohwer, 1909g:381 (Texas, variation); Beebe, Hartley, and Howes, 1917:350 (life history); Howes, 1919:27 (life history); Richards, 1934:242 (revision), 350 (life history summary); Sandhouse, 1940:139 (revision); Krombein in Muesebeck and al., 1951:957 (in catalog of North American Hymenoptera); Evans, 1957b:93 (larva); Lin, 1967:798 (...); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:97 (revision; Texas to Panama); Hook, 1984:534 (nesting and mating); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae);

Pitt and Parker, 2005:62 (nest parasite: mutillid *Sphaerophthalma jacala* Schuster). – **As *Trypargilum spinosum***: Krombein in Krombein and Burks, 1967:395 (listed); C. Lin, 1969:125 (nesting habits); Krombein, 1979b:1647 (in catalog of North American Hymenoptera).

*Trypoxylon cinereo-hirtum* Cameron, 1889a:44, ♀ (as *cinereo-hirtum*, incorrect original hyphenation). Syntypes: Mexico: Teapa in Tabasco, Temax in Yucatan, and Veracruz; Guatemala: Guatemala City and Paraiso (BMNH). Synonymized with *Trypoxylon spinosum* by Richards, 1934:242. – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:243 (invalid lectotype designation: lectotype locality not included in original description).

*Trypoxylon fusciventre* Cameron, 1889a:45. Lectotype: ♀, Mexico: Yucatán: Temax. (BMNH), designated by Richards, 1934:241. Synonymized with *Trypoxylon spinosum* by Coville, 1982b. – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Richards, 1934:241 (revision); R. Bohart and Menke, 1976:348 (listed); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Amarante, 2005:11 (correction to his 2002 catalog).

### 618. *subimpressum* F. Smith

*Trypoxylon subimpressum* F. Smith, 1856:380, ♂. Holotype or syntypes: ♂, Dominican Republic: Santo Domingo (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:418 (listed); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1900:227 (Lesser Antilles: Grenada Island), 307 (in checklist of Caribbean Hymenoptera); W. Schulz, 1903:482 (Haiti, diagnostic characters); Richards, 1934:251 (revision), 1969:121 (Cuba), 122 (in key); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:349 (listed); Genaro, Sánchez, and García, 1990:228 (life history); Genaro and Alayón, 1994:353 (list of prey in Cuba), 1996b:240 (nest and cocoon structure); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Portuendo and Fernández, 2004:135 (Cuba: Sierra Maestra); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae; also: Isla de la Juventud, Hispaniola; record from Grenada by Woodruff et al., 1998 needs confirmation).

### 619. *superbum* F. Smith

*Trypoxylon superbum* F. Smith, 1873b:100, ♀. Holotype or syntypes: ♀, Brazil: Amazonas: Ega, now Tefé (BMNH). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); W. Fox, 1897b:384 (Brazil: Mato Grosso: Chapada do Guimaraes); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:227 (revision); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:32 (revision); Coville and Griswold, 1984:365 (life history, extended guarding of brood by males); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

### *ssp. fulvipes* Cameron

*Trypoxylon fulvipes* Cameron, 1889a:42, ♀. Holotype or syntypes: ♀, Panama: Bugaba (BMNH). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera). – **As *Trypoxylon superbum fulvipes***: Richards, 1934:228 (new status, revision); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:32 (revision; Veracruz State of Mexico to Colombia); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### *ssp. superciliosum* Richards

*Trypoxylon superbum superciliosum* Richards, 1934:229, ♀. Holotype: ♀, Bolivia: Coroico (MNHU). – R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

### 620. *surinamense* Richards

*Trypoxylon surinamense* Richards, 1934:247, ♀. Holotype: ♀, Guyana: Essequibo River, Morabelli Creek (BMNH). – R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:81 (revision; s. Mexico to Brazil); Amarante, 2002:51 (in

catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

### 621. *tenocitlan* Richards

As *Trypoxylon aztecum*: Cameron, 1889a:41 (Mexico), corrected to *Trypoxylon tenocitlan* by Richards, 1934:200.

*Trypoxylon tenocitlan* Richards, 1934:260, ♀, ♂. Holotype: ♀, Mexico: n. Yucatan: no specific locality (BMNH). – Rau, 1943:649 (Mexico: Guerrero: Mexcala, nesting in bamboo poles); R. Bohart and Menke, 1976:349 (listed); Coville and Coville, 1980:110 (life history); Hall, 1981:161 (parasite: *Lepidophora trypoxylona* Hall, 1981, a bombyliid, Costa Rica); Coville, 1982b:57 (revision; Costa Rica north to Veracruz and Mazatlán in Mexico); Amaranate, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Pitt and Parker, 2005:62 (nest parasite: mutillid *Sphaeropthalma jacala* Schuster).

### 622. *texense* de Saussure

*Trypoxylon texense* de Saussure, 1867:77, ♀. Lectotype: ♀, USA, Texas, no specific locality (MHNG), designated by Coville, 1982b:92. – Cresson, 1873:226 (Texas); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1891c:146 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: no specific locality); Cockerell, 1899a:143 (New Mexico); Hartman, 1905:57 (nesting habits); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Hungerford and Williams, 1912:248 (nesting habits); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Rau, 1928:441 (nest, natural enemy); Richards, 1934:233 (revision), 349 (life history summary); Rau, 1940:592 (Illinois: Fish Lake; Oklahoma: Sapulpa, Texas: Franklin; Mexico: Hidalgo: Jacala; reusing nestis of other mud-daubers); Sandhouse, 1940:142 (revision); Rau, 1943:650 (Texas: Rio Grande City, Mexico: Tamaulipas: Santa Engracia, prey: *Ashya minuta* Cambridge, *Misumenops* sp.); Krombein in Muesebeck et al., 1951:957 (in catalog of North American Hymenoptera); Evans, 1959b:159 (larva); Kurczewski, 1963:243 (first Florida record, nesting habits); Thorp, 1973:90 (natural enemy); Freeman, 1974:124, 118 (Jamaica: use of nests of *Sceliphron assimile*); R. Bohart and Menke, 1976:349 (listed); Kumar, Lavigne, Lloyd, and Pfadt, 1976:52 (USA: Colorado: Pawnee National Grassland); Jayasingh and Freeman, 1980a:69-78 (Jamaica: trap-nesting), 1980b:214-219 (population dynamics); Coville, 1982b:91 (revision; ne. Mexico, s. and central USA, introduced into Jamaica); Genaro, 1995b:12 (Dominican Republic: Licey), 1996c:243 (first record from Puerto Rico, inquiline in nests of *Sceliphron caementarium*); Amaranate, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – As *Trypargilum texense*: Krombein in Krombein and Burks, 1967:395 (new combination, listed); C. Lin, 1969:128 (nesting, list of prey); Krombein, 1979b:1647 (in catalog of North American Hymenoptera).

*Trypoxylon sulcus* La Munyon, 1877:page number not indicated Holotype or syntypes: USA: Nebraska: North Platte (lost). Synonymized with *Trypoxylon texense* by W. Fox, 1894a:477. – W. Fox, 1891c:148 (unidentified species), 1894a:477 (original description copied); Dalla Torre, 1897:708 (in catalog of world Hymenoptera).

*Trypoxylon aureolum* Rohwer, 1909g:381, ♀, ♂. Syntypes: ♀, USA: Texas: Lee County: no specific locality (USNM). Synonymized with *Trypoxylon texense* by Sandhouse, 1940:142. – Richards, 1934:231 (not examined).

*Trypoxylon relativum* Rohwer, 1909g:382, ♀. Holotype: ♀, USA: Texas: Lee County: Fedor (USNM) Synonymized with *Trypoxylon texense* by Richards, 1934:233.

### 623. *transversistriatum* Strand

*Trypoxylon transversistriatum* Strand, 1910a:171, ♀, ♂. Lectotype: ♂, Paraguay: Asunción: Villa Morra (ZMHU), designate by Richards, 1934:256. – Richards, 1934:255 (revision); R. Bohart and Menke, 1976:349 (listed); Amaranate, 2002:51 (in catalog of Neotropical Crabronidae).

### 624. *tridentatum* Packard



*Trypoxylon tridentatum* Packard, 1867:417, ♀. Syntypes: USA: New Jersey and New York: no specific locality (depository?). – Cresson, 1873:226 (Texas); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); W. Fox, 1891c:144 (in revision of North American *Trypoxylon*, description of ♂), 1892b (New Jersey: Jamesburg), 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Cockerell, 1899a:143 (New Mexico); Viereck, 1903d:120 (Maryland: College Park); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Rohwer, 1916b:677 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rau, 1918:134 (nest); Blackman and Stage, 1924:196 (New York: Syracuse, nesting in dead wood of hickory); Richards, 1930c:127 (stylopized specimen from Sonora State, Mexico); Rau, 1934b:259 (twig nesting); Richards, 1934:232 (revision), 349 (citation of Rau, 1918:134); Brimley, 1938:443 (North Carolina: Raleigh); Sandhouse, 1940:146 (...); Krombein *in* Muesebeck and alii, 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park); Evans, 1957b:93 (larva); Krombein, 1958a:52 (USA: West Virginia: Lost River State Park); Evans, 1959b:161 (larva); Krombein, 1959:150 (taxonomy, as *tridentatum tridentatum*); F. Paker, 1962b:140 (parasite: *Chrysis mucronata* Brullé); F. Parker and R. Bohart, 1966:95 (California: Borego Springs, Davis, Nevada: Verdi; parasites: *Amobia floridensis* Townsend, Sarcophagidae, *Epistenia coeruleata* Westwood, Pteromalidae, *Chrysis pellucidula* Aaron, *Trichrysis deversor* Bohart, and *Ceratochrysis antyga* Bohart, Chrysididae); Medler, 1967:344 (nest); R. Bohart and Menke, 1976:349 (listed); Coville, 1979a:73 (extra midtibial spur), 1982:58 (revision, s. Canada to s. Mexico except peninsular Florida); Rust, Menke, and Miller, 1985:47 (California: Channel Islands); Coville, 1986a:119 (spider prey in Arizona and California); Frommer, 1988:96 (California: Riverside County: Deep Canyon; as *tridentatum tridentatum*); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:151 (number of ovarioles); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 55 (first record from Ontario: Fonthill, Harrow). – **As *Trypargilum tridentatum***: Krombein *in* Krombein and Burks, 1967:395 (cataloged); Krombein, 1967b:193 (life history observed in artificial nests, as *tridentatum tridentatum*); Krombein, 1979b:1649 (in catalog of North American Hymenoptera); O'Brien, 1983c:288 (nesting habits); Jiménez and Tejas, 1994:173 (list of prey); Horn and Hanula, 2004:467 (South Carolina: Savannah River Site near Aiken).

*Trypoxylon projectum* W. Fox, 1891c:141, ♀, ♂. Lectotype: ♀, USA: Louisiana: no specific locality (ANSP), designated by Cresson, 1928:55. Synonymized with *Trypoxylon tridentatum* by Sandhouse, 1940:146. – W. Fox, 1894a:474 (in revision of North American Larrinae), 1894c:104 (Mexico: Baja California); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:231 (revision).

As *Trypoxylon rubrocinctum*: Paetzl, 1973:26 (male behavior), corrected to *Trypoxylon tridentatum* by Coville, 1982b:59.

### **ssp. *archboldi* Krombein**

*Trypoxylon tridentatum archboldi* Krombein, 1959d:150, ♀, ♂. Holotype: ♀, Florida: Highlands County: Lake Placid (USNM). – R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:61 (revision, peninsular Florida). – **As *Trypargilum tridentatum archboldi***: Krombein *in* Krombein and Burks, 1967:395 (listed); Krombein, 1967b:200 (life history observed in artificial nests, as *collinum collinum*); Krombein, 1979b:1649 (in catalog of North American Hymenoptera).

### **625. *triodon* Richards**

*Trypoxylon triodon* Richards, 1934:259, ♀, ♂. Holotype: ♂, Argentina: no specific locality (USNM). – Bischoff and von Schulthess, 1937:170 (Argentina, Bolivia); R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

### **626. *vagulum* Richards**

*Trypoxylon* sp. near *aztecum*: Rau, 1933:169, corrected to *Trypoxylon vagulum* by Rau, 1935b:188.

*Trypoxylon vagulum* Richards, 1934:266, ♂, ♀. Holotype: ♂, Colombia: Magdalena: Río Frio (BMNH). – R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:63 (revision, s. Mexico to Brazil); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Amarante, 1993:20 (ne. Brazil); Coville, Griswold, and Coville, 2000:28 (nesting behavior); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

As *Trypoxylon* sp. near *aztecum*: Rau, 1933:169 (Panama: Barro Colorado, ...), corrected to *Trypoxylon vagulum* by Rau, 1935b:188.

### 627. *vagum* F. Smith

*Trypoxylon vagum* F. Smith, 1873b:99, ♀. Holotype: ♀, Brazil: Amazonas: São Paulo de Olivença (BMNH). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Richards, 1934:266 (revision); R. Bohart and Menke, 1976:349 (listed); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

### 628. *xanthandrum* Richards

*Trypoxylon xanthandrum* Richards, 1934:262, ♂. Holotype: ♂, Panama: Tabernilla in Canal Zone (USNM). – R. Bohart and Menke, 1976:349 (listed); Coville and Griswold, 1983:205 (nesting, prey); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

### 629. *xanthianum* de Saussure

*Trypoxylon xanthianum* de Saussure, 1867:78, ♀, ♂. Lectotype: sex not indicated, Mexico: Baja California Sur: Cabo San Lucas (MHNG), designated by Coville, 1982b:99. – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); W. Fox, 1891c:148 (unidentified species); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Richards, 1934:231 (not examined); Sandhouse, 1940:141 (revision); R. Bohart and Menke, 1976:349 (listed); Coville, 1982b:99 (revision, s. California to tip of Baja California); Cornett, 1986:224 (California: Palm Springs; on flowers of *Washingtonia filifera* (Wendl)); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Frommer, 1988:96 (California: Riverside County: Deep Canyon); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Amarante, 2005:5 (in addendum to his 2002 catalog of Neotropical Crabronidae and Sphecidae). – As *Trypargilum xanthianum*: Krombein, 1979b:1647 (in catalog of North American Hymenoptera).

### sp.

W. Fox, 1893d:10 (Mexico: Baja California); Rudow, 1899:141 (nest structure); Nurse, 1914:445 (India: Assam); von Schulthess, 1914:286 (Cameroon); Giffard, 1916:230 (California: Alameda or Santa Clara County); Timberlake, 1918:458 (nest made in glass pipette, Hawaiian Islands); F. Williams, 1921:458 (a species introduced to Hawaii identical with specimens from Philippines and Hong Kong.); Molitor, 1938:450 (color recognition); Rau, 1943:649 (sp. group *fabricator*, Mexico, making mud nests, sp. near *nitidum*, nesting in nests of *Polistes instabilis*; sp. near *palliditarse*, nest construction, cocoon, nest parasites); Soukup, 1943:266 (Peru); H.O. Wagner (nest construction in Mexico); Leclercq, 1955i:407 (Rwanda); Tsuneki, 1962a:5 (sp. No.1), 6 (sp. No. 2 and 3) (Ryukyu Islands: Amami Oshima Islands); de Beaumont, 1967b:510, 511 (South Africa), 1970a:402 (Afghanistan); Dorris, 1970:10 (list of prey); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); Danks, 1971c:80 (nest mortality); Haneda, 1971b:31 (Taiwan); Evans, 1972b:16 (Caribbeans: Dominica Island; sp. near *nitidum*); Gess, 1981:25 (South Africa: 18 km WNW Grahamstown; nesting in vertical banks), 30 (nesting in woody stems), 32 (in pithy stems), 34 (in old galleries of *Xylocopa caffrariae* in *Phragmites australis*), 60 and 66 (nesting both in vertical banks and plant tissue), 66 (nesting in three stem types), 70 (partition wall in the nest), 75 (member of a nesting community associated with *Aloe ferox*); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Rust, Menke, and Miller, 1985:47 (California: Channel Islands); Snelling,

1992:14 (Virgin Islands: Mona Island); Amarante, 1993:19 (ne. Brazil); Cambra, 1993:16 (Peru: Pakitza, 11°57'S, 71°17'W); Hoshiba and Imai, 1993:467 (chromosome number  $n = 9$  and 13); Simon Thomas and Wiering, 1993:406 (Cape Verde Islands); Snelling, 1993:19 (British Virgin Islands: Mona Island); Morato, 1994:13 (nest parasite: *Xystromutilla asperiventris*); Camillo, Garófalo, Serrano, and Muccillo, 1995:466 (Brazil, highest nesting frequency in September to April); Gomes, Pompolo, and Campos, 1995:174 (chromosome number  $n = 16$ ), 1997:179 (study of karyotypes); Assis and Camillo, 1997:338-344 (observations in trap nests); Rayor, 1997: 70 (successful predator of colonial spider *Metepeira incrassata*); Beardsley and Perreira, 2002:13 (Hawaiian Islands); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Nachtigall, 2000:6 (wing bending and folding during flight without or with prey); Smit, 2000:176 (Madeira); Morato, 2001:740 (Brazil: Amazonas: 90 km N Manaus; effects of habitat fragmentation); Klein, Steffan-Dewenter, Buchori, and Tschardtke, 2002:1008 (Indonesia: Sulawesi: Lore-Lindu National Park 60 km S Palau); Alves-dos-Santos, 2003:330 (Brazil: University of São Paulo campus); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Cambra and Quintero, 2004:471 (*Xystromutilla Turrialba* Casal reared from nest of *Trypoxylon* sp); Portuendo and Fernández, 2004:135 (Cuba: Nipe-Sagua-Baracoa mountains); Pitts and Mansley, 1004:10 (nest parasite: mutillid *Lomachaeta cirrhomoris* Pitts and Mansley); 2005:62 (subgenus *Trypargilum*, nest parasite: mutillid *Sphaerophthalma jacala* Schuster); Genaro, 2006:57 (in checklist of Cuban Sphecidae and Crabronidae).

#### FOSSIL TRYPOXYLON

##### **dominicanum** Prentice and Poinar

*Trypoxylon dominicanum* Prentice and Poinar, 1993:281, ♂. Holotype: ♂, Dominican Republic: Cordillera Septentrional between Santiago and Puerto Plata, Late Eocene to Late Oligocene (Manuel Pérez personal coll., Dominican Republic). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

##### **electrum** Antropov

*Trypoxylon electrum* Antropov, 1995a:125, ♀. Holotype: ♀, Dominican Republic, Late Eocene to Lower Miocene (Brodzinski & Lopez Penha personal coll., Dominican Republic). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

##### **eucharis** Prentice and Poinar

*Trypoxylon eucharis* Prentice and Poinar, 1993:286, ♀. Holotype: ♀, Dominican Republic: Cordillera Septentrional between Santiago and Puerto Plata, Late Eocene to Late Oligocene (Poinar Dominican amber coll., UCB). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

##### **pallidiventre** Prentice and Poinar

*Trypoxylon pallidiventre* Prentice and Poinar, 1993:288, ♀. Holotype: ♀, Dominican Republic: Cordillera Septentrional between Santiago and Puerto Plata, Late Eocene to Late Oligocene (Poinar Dominican amber coll., UCB). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

#### SPECIES DESCRIBED IN TRYPOXYLON OF UNKNOWN CURRENT PLACEMENT

*Trypoxylon unicolor* Palisot de Beauvois, 1811:116, sex not indicated. Holotype or syntypes: USA: South Carolina: no specific locality (destroyed?) – Cresson, 1862:235 (in catalog of North American Hymenoptera); W. Fox, 1891c:148 (unidentified species), 1894a:477 (original description copied); Dalla Torre, 1897:709 (in catalog of World Hymenoptera).

#### NOMINA NUDA IN TRYPOXYLON

*annulatum* Cameron: Richards, 1934:315.

- Atritarse* Harris, Catalog of the Insects of Massachusetts, 2<sup>nd</sup> edition – Cresson, 1862:235 (in catalog of North American Hymenoptera)
- aureosericeum* Schrottky: Schrottky, 1913a:228; Bertoni, 1911:135 (nest and prey).
- coriae* Brèthes: Jörgensen, 1912:293 (Argentina: Mendoza Province).
- dimiatifrons*: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection), may be a misspelling.
- funebre*: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection).
- geniculatum* Cameron, 1889c:118 (India: Barrackpore) – Begum and Bose, 1976:26 (Bangladesh: Dakka).
- hispanicum* Mercet: Richards, 1934:315.
- hingstoni* Richards: Dollfuss, 1989:13 (paratype in NHMW).
- labiatum* Pérez: Antiga and Bofill, 1904:13 (Spain: Cataluña Province).
- meridionale* Gussakovskij, 1936:663, nec Richards, 1934.
- nigricans* Cameron, 1889c:119 (India: Barrackpore).
- ollarium*: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection).
- quinquedentatum* (as *5-dentatum*): Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection), possibly a misspelling of *Trypoxylon tridentatum*.
- pruinatum*: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection).
- simlaense* Cameron: R. Turner, 1917:203; Richards, 1934:315.